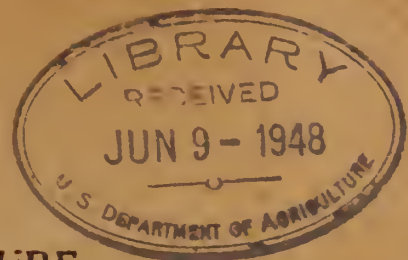


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UNITED STATES DEPARTMENT OF AGRICULTURE
LIBRARY

Number 20

BIBLIOGRAPHICAL CONTRIBUTIONS

January, 1930.

CHECK LIST OF PUBLICATIONS ON ENTOMOLOGY

issued by the

United States Department of Agriculture
through 1927, with subject index

Compiled by

Mabel Colcord
Ina L. Hawes
and
Angelina J. Carabelli

of the
Library, Bureau of Entomology

Washington, D. C.

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PREFACE

As entomological investigations have been conducted by the Department of Agriculture from the earliest period of its history, the number of entomological publications which have been issued by the department is large. The need for some complete list of these publications has been felt for some time and it is to meet this need that the following checklist has been compiled by the library staff of the Bureau of Entomology.

The Library is interested in establishing exchange relations with institutions which issue publications on entomology and other subjects pertaining to the work of the department. It should be explained, however, that a large proportion of the publications included in the following checklist are now out of print. Only the more recent publications are available for distribution.

Claribel R. Barnett,

April 1, 1929.

Librarian.

COMPILER'S ACKNOWLEDGMENTS

The Library of the Bureau of Entomology has for years maintained a card index to the publications of the bureau as an aid to quick reference work. These publications have now become so numerous that it is difficult for those interested to know what the bureau has published. To obviate this difficulty the following list has been compiled. In addition to the publications of the Bureau of Entomology the list includes those dealing with entomology but emanating from other bureaus, divisions, and offices of the department. In 1913 the separate bureau series of bulletins, circulars, etc., were discontinued and several departmental series were started, in which were included contributions from all bureaus.

The present list is in four parts: (1) The general series of the department; (2) the publications of the Bureau of Entomology; (3) the publications relating to entomology of other bureaus, divisions, and offices of the department; (4) the subject index.

Miss Ina L. Hawes of the bureau library prepared the subject index; Miss Angelina J. Carabelli, also of the bureau library, gave many helpful suggestions as to the arrangement of the index, and copied in its final form for mimeographing the greater part of the manuscript of the check list as well as the index. Mr. Rolla P. Currie, in charge of Information and Editorial Work in the bureau, gave valuable suggestions and advice in regard to material to be included and in regard to the arrangement of the list as a whole, Dr. W. H. Larrimer, in charge of the Division of Cereal and Forage Insects, kindly gave the services of an assistant in that office in copying the manuscript.

Mabel Colcord,
Librarian, Bureau of Entomology.

April 1, 1929.

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DEPARTMENT OF AGRICULTURE

Annual Reports
1839-1927

The annual report on agriculture began in 1837 with a two-page statement in the report of Henry L. Ellsworth, Commissioner of Patents. From that date to 1861 it formed a part of the report of the Commissioner of Patents, making a separate volume after 1849.

In 1862 the Department of Agriculture was established and its annual report was uniformly issued up to 1893. Beginning with the report for 1894, in accordance with paragraph 2, section 73, of the Printing Act of Jan. 12, 1895, the report has been prepared in two volumes, one containing the Secretary's report and the purely executive reports of the several chiefs of bureaus, divisions, and offices; the other, known as the Yearbook, embracing the Secretary's report and a collection of special articles on agricultural science. In 1889 the title of the head of the department was changed from Commissioner of Agriculture to Secretary of Agriculture and the Secretary became a member of the Cabinet.

In the following analysis of the reports signed articles on insects, and unsigned articles of some length only, are listed. Many incidental references have not been included. The annual reports of the entomologist are listed under the Bureau of Entomology, those of other offices under the various offices.

- 1847, p. 175-179. Silk. [Musccardine disease produced by *Botrytis bassiana*.]
p. 440-455. Byram, H. P. Silk, an essay on the culture and manufacture of silk.
- 1849, p. 9-10. Lee, Daniel. The ravages of insects.
p. 333-337. Curtis, John. Observations on various insects affecting grain, [Condensed from Journal of Royal Agricultural Society; signed W.P.F.]
p. 339-342. Observations on various insects affecting peas and beans.
- 1851, p. 54-59. Macgowan, D.J. Uses of *Stillingia sebifera* or tall tree, with a notice of the pela or insect wax of China.
- 1853, p. 74-75. Bees.
p. 77-79. Silk.
- 1854, p. 58-59. Insects. illus. Signed: D.J.B.
p. 59-69. Glover, Townend. Insects injurious and beneficial to vegetation. illus.
- 1855, p. 1-1ii. Browne, D.I. Kermes oak.
p. 1ii-1iii. Browne, D.I. Gall-nut oak.

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Annual Reports, (Cont'd.)

- 1825, p. 64-115. Glover, Townend. Insects frequenting the cotton plant.
 p. 115-119. Insects injurious and beneficial to the orange-tree.
 p. 120-121. Bees, wax and honey. Bee-culture in Russia.
- 1857, p. 107-121. D. J. B. Nature and habits of the honey-bee.
 p. 121-129. Glover, Townend. Investigations of the insects and diseases affecting the cotton plant.
 p. 129-130. D.J.B. Persian insect powders.
- 1858, p. 256-271. Glover, Townend. Insects frequenting the orange trees of Florida.
 p. 271-272. Glover, Townend. Insects injurious to the cotton plant in Florida.
 p. 272-279. Jackson, C.T. Researches on the cotton stainer, or red bug [*Dysdercus suturellus* H. Schf.].
- 1860, p. 268-301. Buckisch, William. Bee culture.
 p. 312-322. Uhler, P.R. Insects injurious to vegetation.
- 1861, p. 223-231. Willemot, C. On the destruction of noxious insects by means of the "*Pyrethrum willemoti*," Duchartre.
 p. 331. Lawson. New Canadian dye.
 p. 374-382. Morris, J. G. The ailanthus silk-worm of China (*Bombyx cynthia* Drury).
 p. 585-621. Rathvon, S.S. Entomology and its relations to the vegetable productions of the soil, with reference to both destructive and beneficial insects.
- 1862, p. 372-390. Rathvon, S.S. Entomology and its relations to the vegetable productions of the soil, with reference to both the destructive and beneficial insects.
 p. 390-394. Morris, J.G. Additional observations on the ailanthus silkworm of China.
- 1863, p. 530-546. Colvin, Richard. The Italian honeybee, or the culture and Italianization of the native or black honeybee.
- 1865, p. 88-101. Glover, Townend. Entomological exhibition in Paris.
 p. 458-475. Tupper, E.S. Beekeeping.
- 1867, p. 209-211. Tupper, E.S. Winter beekeeping.
- 1868, p. 268-271. Schott, Arthur, and Bloede, V.G. The niin [*Coccus cochiniifer*] of Yucatan.
 p. 272-281. Statistics of beekeeping.
 p. 282-304. Silk culture.
 p. 305-318. Practical entomology for farmers' sons. How to collect and preserve insects.
- 1869, p. 207-208. Insects injurious to the [cranberry] vine and fruit.
 p. 224-228. The onion fly [*Anthomyia ceparum* Meig.].
 p. 331-332. Beehives.
- 1870, p. 235-241. Silk culture.
- 1872, p. 304-316. Bollman, Lewis. Silk cultivation.
 p. 451. The new curculio catcher (Dr. Hull's).

UNITED STATES DEPARTMENT OF AGRICULTURE

Annual Reports (Cont'd.)

- 1873, p. 389-390. Riley, C. V. [Grape Phylloxera.]
p. 475 Wait, O. C. [Advantage of beekeeping.]
- 1876, p. 323-325. Breed, Daniel. Recent inventions for insect destruction.
- 1877, p. 59-60. The Pyrethrums as insect destroyers.
p. 264-333. The Rocky Mountain locust, or grasshopper [*Caloptenus spretus* Uhler] of the West.
- 1880, p. 236-275. Comstock, J. H. Miscellaneous insects.
p. 276-349. Comstock, J. H. Report on scale insects.
p. 350-373. Howard, L. O. Report on the parasites of the Coccidae in the collection of the department.
- 1881/82, p. 195-214. Comstock, J. H. Report on miscellaneous insects.
- 1883, p. 138-151. Packard, A. S. Report on the causes of destruction of evergreen forests in northern New England and New York.
- 1883, p. 152-159. Hubbard, H. G. Report of progress in experiments on scale insects, with other practical suggestions.
- 1884, p. 361-373. Hubbard, H. G. Rust of the orange. [Due to *Phyllocoptes oleivorus* Ashm.]
p. 374-383. Packard, A. S. Second report on the cause of the destruction of evergreens and other forest trees in northern New England and New York.
p. 383-393. Webster, F. M. Insects affecting fall wheat.
p. 393-398. Smith, J. B. Report upon insects affecting the hop and the cranberry.
p. 398-403. Bruner, Lawrence. Notes from Nebraska.
- 1885, p. 289-303. Coquillett, D. W. Report on the locusts of the San Joaquin Valley, California.
p. 303-307. Bruner, Lawrence. Report on the abundance of the Rocky Mountain locust [*Melanoplus spretus* Uhler] in 1885.
p. 308-311. Koebele, Albert. Notes on locusts at and about Folsom, California.
p. 311-319. Webster, F. M. Insects affecting fall wheat.
p. 319-333. Packard, A. S. Third report on the causes of the destruction of the evergreen and other forest trees in northern New England.
p. 333-343. McLain, N. W. Report on experiments in apiculture.
- 1886, p. 552-557. Coquillett, D. W. Report on remedies for the cottony cushion scale [*Icerya purchasi* Mask.].
p. 558-572. Koebele, Albert. Report upon the supplementary experiments on the cottony cushion scale [*Icerya purchasi* Mask.] followed by a report on experiments on the red scale [*Aspidiotus aurantii* Mask.].
p. 573-582. Webster, F. M. Insects affecting small grains and grasses.
p. 583-591. McLain, N. W. Report on experiments in apiculture.

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Annual Reports (Cont'd.)

- 1887, p. 51-88. Howard, L. O. The chinch-bug [*Blissus leucopterus* Say]. illus.
- p. 88-115. Howard, L. O. The codling moth [*Carpocapsa pomonella* L.].
- p. 115-122. Walker, Philip. Silk culture. Report on the year's operations.
- p. 123-142. Coquillett, D. W. Report on the gas treatment for scale insects.
- p. 143-147. Koebele, Albert. Report on experiments against scale insects.
- p. 147-154. Webster, F. M. Report on the season's observations, and especially upon corn insects.
- p. 154-164. Osborn, Herbert. Report upon the insects of the season in Iowa.
- p. 164-170. Bruner, Lawrence. Report on the season's observations in Nebraska.
- 1887, p. 170-178. McLain, N. W. Report on experiments in apiculture.
- 1888, p. 78-102. Webster, F. M. Experiments in rearing the plum curculio [*Conotrachelus nenuphar* Host.] from plums and other fruit.
- p. 102-111. Alwood, W. B. Report on experiments with remedies against the hop louse [*Phorodon humuli* Schrank].
- p. 111-123. Walker, Philip. Silk culture. Report of the year's operations.
- p. 123-133. Coquillett, D. W. Report on various methods for destroying scale insects.
- p. 133-139. Murtfeldt, M. E. Entomological notes of the season of 1888.
- p. 139-141. Bruner, Lawrence. Report on Nebraska insects.
- p. 141-142. Tracy, S. M. Experiments on the boll worm [*Heliothis obsoleta* Fab.] injuring tomatoes.
- p. 515-523. Merriam, C. H. Insect food of the crow.
- 1889, p. 453-476. Walker, Philip. Report of the Silk Section.
- 1890, p. 70-71. Willits, Edwin. The scientific work of the department in its relation to practical agriculture. Entomology.
- p. 107-110. Salmon, D. E. The relation of ticks to Texas cattle fever.
- p. 265-276. Walker, Philip. Report of the chief of the Silk Section. illus.
- 1891, p. 130-135. Smith, Theobald. Texas fever.
- p. 482-483. Saunders, William. Insects [of shade trees].
- 1892, p. 110-116. Smith, Theobald. Texas cattle fever.
- p. 193-200. Barrows, W. B. Economic ornithology. [Mentions insect food of birds.]
- 1893, p. 125-129, 152. Salmon, D. E. Texas fever.
- 1894, p. 38-39. Division of Entomology.
- 1895, p. 46-47. Entomology.

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Annual Reports (Cont'd.)

- 1897, p. xxxiv-xxxvi. Division of Entomology.
1898, p. xii. Remedy for fever ticks of cattle
1899, p. xiv-xv. Division of Entomology.
1900, p. lxxvii. Silk culture.
1901, p. xcvi-xcix. Division of Entomology.
1902, p. lxxx-xc. Division of Entomology.
1903, p. lxxiii-lxxix. Division of Entomology.
1904, p. lxxvii-lxxv. Bureau of Entomology.
1905, p. lxxxix-xciv. Bureau of Entomology.
1906, p. 25-28. Eradication of the Texas fever tick.
p. 68-74. Bureau of Entomology.
1907, p. 87-96. Bureau of Entomology.
p. 203-205. Melvin, A. D. Texas fever.
1908, p. 102-111. Bureau of Entomology.
p. 250-251. Melvin, A. D. Animal dips.
1909, p. 107-115. Bureau of Entomology.
p. 201-202. Eradication of cattle ticks.
p. 212-213. Melvin, A. D. Texas or splenetic fever.
1910, p. 113-121. Bureau of Entomology.
p. 273-274. Melvin, A. D. Investigations relative to tick [*Margaropus annulatus* Say] eradication.
1911, p. 111-115. Bureau of Entomology.
1912, p. 144-150. Entomology.
1913, p. 126. Work in boll weevil territory.
1914, p. 7. [Entomologists and crop insect control.]
p. 77-78. Melvin, A. D. Eradication of southern cattle ticks.
1915, p. 135-136. Melvin, A. D. Dips to destroy ticks.
1916, p. 17. Exterminating cattle ticks.
1917, p. 20-22. Control of plant diseases and insects.
p. 40-43. The pink bollworm of cotton.
1918, p. 26-29. The pink bollworm of cotton.
1919, p. 113-115. Tick eradication division.
1920, p. 28-29. Insects - corn borer - The gipsy moth in New Jersey -
Emergency fund to combat insect outbreaks.
1921, p. 36-37. Stamping out plant and animal diseases.
1922, p. 25-27. The war against insect pests.
p. 27-28. The nursery stock, plant and seed quarantine.
1923, p. 44-45. Insect enemies.
p. 58. Insecticide and fungicide act.
1924, p. 67-69. Damaging insects held in check.
1925, p. 64-65. Fighting insect pests.
p. 68. Tick eradication makes progress.
1926, p. 76-77. Exclusion of plant pests.
1927, p. 50. Tick eradication.
p. 54-59. Research in entomology.

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETINS

1-1500

1913-1927

In July, 1913, the bureau series of bulletins, circulars, etc., were discontinued and a new series of Department Bulletins was established, in which was published, as contributions from the various bureaus, divisions, and offices, the popular and semitechnical matter which had been previously published in the separate series. Succeeded by Technical Bulletins.

5. Webster, F.M. The southern corn rootworm, or budworm [*Diabrotica duodecimpunctata* Oliv.]. 11 p., illus. 1913.
8. Webster, F.M. The western corn rootworm [*Diabrotica longicornis* Say]. 8 p., illus. 1913.
14. Hutchison, R.M. The migratory habit of housefly [*Musca domestica* L.] larvae as indicating a favorable remedial measure. 11 p. 1914. (Professional Paper.)
15. Parker, W.B. A sealed paper carton to protect cereals from insect attack. 8 p., illus. 1913.
19. Johnson, Fred. The grape leafhopper [*Typhlocyba comes* Say] in the Lake Erie Valley. 47 p., illus. 1914. (Professional Paper.)
45. Wood, H.P. Experiments in the use of sheep in the eradication of the Rocky Mountain spotted fever tick [*Dermacentor venustus* Banks]. 11 p. 1913.
59. Morgan, A.C., and Crumb, S.E. The tobacco splitworm [*Phthorimaea operculella* Zeller]. 7 p. 1914. (Professional Paper.)
76. Chapin, R.M. Laboratory and field assay of arsenical dipping fluids. 17 p., illus. [Contrib. from Bur. Anim. Indus.] (Professional Paper.)
78. Runner, G.A. The so-called tobacco wireworm [*Crambus caliginosellus* Clem.] in Virginia. 30 p., illus. 1914.
88. Quaintance, A.L. The control of the codling moth [*Carpocapsa pomonella* L.] in the Pecos Valley in New Mexico. 8 p., illus. 1914.
90. Russell, H.M. The rose aphid [*Macrosiphum rosae* L.]. 15 p. illus. 1914.
92. White, G.F. Destruction of germs of infectious bee diseases by heating. 8 p. 1914.
93. Phillips, E.F., and Demuth, G.S. The temperature of the honey-bee cluster in winter. 16 p., illus. 1914.
95. Miller, J.M. Insect damage to the cones and seeds of Pacific coast conifers. 7 p., illus. 1914.
96. Gates, B.N. The temperature of the bee colony. 29 p., illus. 1914. (Professional Paper.)
100. Davidson, W.M. Walnut aphides in California. 48 p., illus. 1914. (Professional Paper.)
104. Shaw, H.B. Thrips as pollinators of beet flowers. 12 p., illus. 1914. [Contrib. from Bur. Plant Indus.]

UNITED STATES DEPARTMENT OF AGRICULTURE

Bulletins (Cont'd.)

107. Kalmbach, E.R. Birds in relation to the alfalfa weevil [*Phytonomus posticus* Gyll.]. 64 p. illus. 1914. [Contrib. from Bur. Biol. Survey.] (Professional Paper.)
111. Brunner, Josef. The sequoia pitch moth [*Vespa mima* sequoia Hy. Edw.] a menace to the pine in western Montana. 11 p., illus. 1914.
112. Davis, J.J. The oat aphid [*Aphis avenae* Fab.]. 16 p., illus. 1914.
113. Scott, E.W., and Paine, J.H. The lesser bud-moth [*Recurvaria nanella* Hübner]. 16 p., illus. 1914. (Professional Paper.)
118. Cook, F.C., Hutchison, R.H., and Scales, F.M. Experiments in the destruction of fly larvae [*Musca domestica* L.] in horse manure. 26 p., illus. 1914. (Professional Paper.)
124. Wildermuth, V.L. The alfalfa caterpillar [*Eurytus eurytheme* Boisd.]. 40 p., illus. 1914.
131. Graybill, H.W. Repellents for protecting animals from the attacks of flies. 26 p. 1914.
134. Quayle, H.J. Citrus fruit insects in Mediterranean countries. 35 p., illus. 1914. (Professional Paper.)
147. Woodward, T.E., Turner, W.F., and Curtice, Cooper. The effect of the cattle tick [*Margaropus annulatus* Say] upon the milk production of dairy cows. 22 p., illus. 1915. [Contrib. from Bur. Anim. Indus.]
156. Hyslop, J.A. Wireworms [*Elaterridae*] attacking cereal and forage crops. 34 p., illus. 1915.
160. High, M.M. Cactus solution as an adhesive in arsenical sprays for insects. 20 p. 1915. (Professional Paper.)
161. Back, E.A. The Mediterranean fruit fly [*Ceratitidis capitata* Wied.] in Bermuda. 8 p. 1914.
163. Chapin, R.M. A field test for lime-sulphur dipping baths. 7 p., illus. 1915. [Contrib. from Bur. Anim. Indus.]
165. Parker, W.B. Quassia as a contact insecticide. 8 p., illus. 1914.
167. Duckett, A.B. Para-dichlorobenzene as an insect fumigant. 7 p., illus. 1915.
170. Busck, August. The European pine-shoot moth [*Evetria buoliana* Schiffermüller]; a serious menace to pine timber in America. 11 p., illus. 1915.
171. Beal, F.E.L. Food of the robins and bluebirds of the United States. 31 p., illus. 1915. [Contrib. from Bur. Biol. Survey.] (Professional Paper.)
173. Foster, S.W., and Jones, P.R. The life history and habits of the pear thrips [(*Euthrips*) *Taeniothrips pyri* Daniel] in California. 52 p., illus. 1915.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bulletins (Cont'd.)

184. High, M.M. The huisache girdle [*Oncideres putator* Thom.]. 9 p., illus. 1915. (Professional Paper.)
186. Sasser, E.R., and Hawkins, L.A. A method of fumigating seed. 6 p., illus. 1915. [Contrib. from Bur. Ent. and Bur. Plant Indus.]
189. Brooks, F.E., and Blakeslee, E. B. Studies of the codling moth [*Carpocapsa pomonella* L.] in the central Appalachian region. 49 p., illus. 1915.
192. Jones, T.H. Insects affecting vegetable crops in Porto Rico. 11 p., illus. 1915. (Professional Paper.)
197. Scott, E.W. Homemade lime-sulphur concentrate. 6 p. 1915.
200. Hutchison, R.H. A maggot trap in practical use; an experiment in house-fly control. 15 p., illus. 1915.
204. Burgess, A.F. Report on the gipsy moth [*Porthetria dispar* L.] work in New England. 32 p., illus. 1915.
221. Kelly, E.O.G. The southern corn leaf-beetle [*Myochrous denticolis* Say]. 11 p., illus. 1915. (Professional Paper.)
226. Fink, D.E. The verbena bud moth [*Olethreutes hebesana* Walk.]. 7 p., illus. 1915. (Professional Paper.)
227. Humphrey, C.J., and Fleming, R.M. The toxicity to fungi of various oils and salts, particularly those used in wood preservation. 38 p., illus. 1915. [Contrib. from Bur. Plant Indus.]
231. Coad, B.R. Recent studies of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.]. 34 p., illus. 1915. (Professional Paper.)
233. Coad, B.R. Relation of the Arizona wild cotton weevil [*Anthonomus grandis thurberiae* Pierce] to cotton planting in the arid West. 12 p., illus. 1915.
235. Parker, W.B. Control of dried-fruit insects in California. 15 p., illus. 1915.
239. Fink, D.E. The egg-plant lace-bug [*Gargaphia solani* Heidemann]. 7 p., illus. 1915.
243. Miller, J.M. Cone beetles [*Conophthorus lambertianae* Hopk. and *C. ponderosae* Hopk.]; injury to sugar pine and western yellow pine. 12 p., illus. 1915. (Professional Papers.)
245. Cook, F.C., Hutchison, R.H., and Scales, F.M. Further experiments in the destruction of fly larvae in horse manure. 22 p., illus. 1915.
248. Bishopp, F.C. Fleas. 31 p., illus. 1915.
250. Mosher, F.H. Food plants of the gipsy moth [*Porthetria dispar* L.] in America. 39 p., illus. 1915.
251. Burgess, A.F., and Collins, C.W. The Calosoma beetle (*Calosoma sycophanta*)[L.] in New England. 40 p., illus. 1915. (Professional Paper.)
252. Siegler, E.H., and Simanton, F.L. Life history of the codling moth [*Carpocapsa pomonella* L.] in Maine. 50 p., illus. 1915.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bulletins (Cont'd.)

254. Gibson, E.H. The sharp-headed grain leafhopper [*Draeculacephala mollipes* Say]. 16 p., illus. 1915. (Professional Paper.)
255. Brunner, Josef. Douglas fir pitch moth [*Sesia novaroensis* Hy. Edw.]. 23 p., illus. 1915. (Professional Paper.)
256. Horton, J.R., and Pemberton, C.E. Katydid [Scudder's *furcata* Brunner and *Microcentrum rhombifolium* Sauss.] injurious to oranges in California. 24 p., illus. 1915. (Professional Paper.)
259. Chapin, R.M. Studies on changes in the degree of oxidation of arsenic in arsenical dipping baths. 12 p. 1915. [Contrib. from Bur. Anim. Indus.] (Professional Paper.)
260. Hall, M.C. The dog as a carrier of parasites and disease. 27 p., illus. 1915. [Contrib. from Bur. Anim. Indus.] p. 19-22. Fleas and ticks.
261. Blakeslee, E.B. American plum borer [*Euzophera semifuneralis* Walk.]. 13 p., illus. 1915. (Professional Paper.)
262. Brooks, F.E. The parandra borer [*Parandra brunnea* Fab.] as an orchard enemy. 7 p., illus. 1915.
263. Scammel, H.B. The cranberry rootworm [*Rhabdopterus picipes* Oliv.]. 8 p., illus. 1915. (Professional Paper.)
264. Chittenden, F.H. The violet rove-beetle [*Apocellus sphaericollis* Say]. 4 p. 1915.
265. Newcomer, E.J. The dock false-worm [*Ametastegia glabrata* Fallén]: An apple pest. 40 p., illus. 1916. (Professional Paper.)
273. Collins, C.W. Dispersion of the gipsy-moth larvae [*Porthetria dispar* L.] by the wind. 23 p., illus. 1915. (Professional Paper.)
276. Davis, J.J. The pea aphid [*Macrosiphum pisi* Kalt.] with relation to forage crops. 67 p., illus. 1915. (Professional Paper.)
278. Scott, E.W., and Siegler, E.H. Miscellaneous insecticide investigations. 47 p. 1915. (Professional Paper.)
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- III, p. 29-40. Leach, B.R. Experiments in the control of the root form of the woolly apple aphid [*Eriosoma lanigerum* Hausmann].
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1160. Richardson, C.H., and Smith, C.R. Studies on contact insecticides. 15 p. 1923. [Contrib. from Bur. Ent. and Bur. Chem.]
1169. Snapp, Oliver I., and Alden, Charles A. Further studies with paradichlorobenzene for peach-borer [*Aegeria exitiosa* Say] control with special reference to its use on young peach trees. 19 p., illus. 1923.
1178. Winston, J.R., Bowman, J.J., and Yothers, W.W. Bordeaux-oil emulsion. 24 p., illus. 1923. [Contrib. from Bur. Plant Indus. and Bur. Ent.]
1182. Middleton, William. The imported pine sawfly [*Diprion simile* Hartig]. 22 p., illus. 1923.
1196. Wetmore, Alexander. Food and economic relations of North American grebes. 24 p., illus. 1924. [Contrib. from Bur. Biol. Survey.]
1201. McIndoo, N.E., and Sievers, A.F. Plants tested for or reported to possess insecticidal properties. 62 p., illus. 1924. [Contrib. from Bur. Ent. and Bur. Plant Indus.]
1204. Coad, B.R., Johnson, E., and McNeil, G.L. Dusting cotton from airplanes. 40 p., illus. 1924. [U.S. Dept. Agr. in coop. with Air Service, U.S. Dept. of War.]
1205. Snapp, O.I., and Alden, C.H. Dusting and spraying peach trees after harvest for control of the plum curculio [*Conotrachelus nenuphar* Hbst.]. 19 p., illus. 1924.
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1218. Webb, J.L., and Wells, R.W. Horse-flies: Biologies and relation to western agriculture, with a description of the mature larva of *Tabanus punctifer*, by Adam J. Böving, and a description of a new species by J.S.Hime. 36 p., illus. 1924. [Contrib. from Bur. Ent. in coop. with Nevada Agr. Expt. Sta.]
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- 1, Nelson, James A., and Sturtevant, A.P. The rate of growth of honeybee larvae.
- II, Lineburg, Bruce. The feeding of honeybee larvae.
1223. Herbert, F.W. The European elm scale [*Gossyparia spuria* Modeér] in the West. 20 p., illus. 1924.
1225. Yothers, W.W., and Mason, Arthur C. The camphor thrips [*Cryptothrips floridensis* Watson]. 30 p., illus. 1924.
1228. Davidson, W.M. Results of experiments with miscellaneous substances against the chicken mite [*Dermanyssus gallinae* DeGeer]. 11 p. 1924. [Contrib. from Insect. and Fungicide Bd.]
1231. Snyder, T.E. Tests of methods of protecting woods against termites or white ants. A progress report. 16 p., illus. 1924.
1232. Snyder, T.E. Damage by termites in the Canal Zone and Panama and how to prevent it. 26 p., illus. 1924.
1235. Newcomer, E.J., and Whitcomb, W.D. Life history of the codling moth [*Carpocapsa pomonella* L.] in the Yakima Valley of Washington. 77 p., illus. 1924. [Contrib. from Bur. Ent. in coop. with Wash. Agr. Expt. Sta.]
1238. Porter, B.A., and Alden, C.H. The cankerworms [*Alsophila pometaria* Harr. and *Paleacrita vernata* Peck]. 38 p., illus. 1924. [Contrib. from Bur. Ent. in coop. with Conn. Agr. Expt. Sta.]
1243. Howard, Neale F., and English, L.L. Studies of the Mexican bean beetle [*Epilachna corrupta* Muls.] in the Southeast. 50 p., illus. 1924.
1249. Gabrielson, Ira N. Food habits of some winter bird visitants. 55 p., illus. 1924. [Contrib. from Bur. Biol. Survey.]
1267. Phillipe, W.J. and Fox, Henry. The rough-headed corn stalk-beetle [*Euethoea rugiceps* Lec.]. 34 p., illus. 1924.
1273. Porter, B. A. The bud moth [*Spilonota ocellana* D. & S.] 20 p., illus. 1924. [Contrib. from Bur. Ent. in coop. with the Conn. Agr. Expt. Sta.]
1294. Snow, S.B., and Kotok, E.I. The role of fire in California pine forests. 80 p., illus. 1924. [Contrib. from Forest Service.] p. 18-22. Insect injury resulting.
1303. Gill, John B. The pecan nut case-bearer [*Acrobasis hebescella* Hulst]. 12 p., illus. 1925.
1307. Griffin, E.L., and Back, E.A. Absorption and retention of hydrocyanic acid by fumigated food products. Part II. 8 p. 1924. [Contrib. from Bur. Chem. and Bur. Ent.]
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1312. McDonnell, C.C., and Young, C.D. Loss of nicotine from nicotine dusts during storage. 14 p., illus. 1925. [Contrib. from Bur. Chem.]
1313. Neifert, Ira E., et al. Fumigation against grain weevils with various volatile organic compounds. 40 p., illus. 1925. [Contrib. from Bur. Chem. and Bur. Ent.]
1320. Ballard, W.W., and Simpson, D.M. Behavior of cotton planted at different dates in weevil-control experiments in Texas and South Carolina. 44 p., illus. 1925. [Contrib. from Bur. Plant Indus.]
1324. Richardson, Charles H. The oviposition response of insects. 18 p. 1925.
1328. Lundie, A.E. The flight activities of the honeybee. 38 p., illus. 1925.
1329. Galloway, B.T. Bamboos: Their culture and uses in the United States. 46 p., illus. 1925. [Contrib. from Bur. Plant Indus.] p. 39-44. Middleton, Wm. Bamboo insects. [Contrib. from Bur. Ent.]
1332. Leach, B.R., and Johnson, J.P. Emulsions of wormseed oil and of carbon disulfide for destroying larvae of the Japanese beetle [*Popillia japonica* Newm.] in the roots of perennial plants. 18 p., illus. 1925.
1335. Nichols, P.F., et al. Commercial dehydration of fruits and vegetables. 40 p., illus. 1925. [Contrib. from Bur. Chem.] p. 27-29. Bach, E.A. Insects attacking dried fruits. [Contrib. from Bur. Ent.]
1336. Hill, Chas. C. Biological studies of the green clover worm [*Plathypena scabra* Fab.]. 20 p., illus. 1925.
1339. Hambleton, James I. The effect of weather upon the change in weight of a colony of bees [*Apis mellifica* L.] during the honey flow. 52 p., illus. 1925.
1349. Nolan, W.J. The brood-rearing cycle of the honeybee [*Apis mellifica* L.]. 56 p., illus. 1925.
1355. Chapin, Edward A. Food habits of the vireos: A family of insectivorous birds. 44 p., illus. 1925. [Contrib. from Bur. Biol. Survey.]
1357. Weigel, C.A. The strawberry rootworm [*Paria canella* Fab.], a new pest on greenhouse roses. 48 p., illus. 1926. [Contrib. from Bur. Ent., Bur. Plant Indus., and Penn. Dept. Agr.]
1359. Wetmore, Alexander. Food of American phalaropes, avocets, and stilts. 20 p., illus. 1925. [Contrib. from Bur. Biol. Survey.]
1363. Webber, R.T., and Schaffner, J.V., Jr. Host relations of *Compsilura concinnata* Meigen, an important tachinid parasite of the gipsy moth and the brown-tail moth. 32 p. 1926.
1364. McIndoo, W.E., and Demuth, G.S. Effects on honeybees of spraying fruit trees with arsenicals. 32 p., illus. 1926.

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- 1369 Bishopp, F.C., et al. The cattle grubs or ox warbles. [*Hypoderma lineatum* DeVillers and *H. bovis* DeGeer], their biologies and suggestions for control. 120 p., illus. 1926.
1371. Abbott, W.S., Culver, Julian J., and Morgan, W.J. Effectiveness against the San Jose scale [*Aspidiotus perniciosus* Comst.] of the dry substitutes for liquid lime-sulphur. 27 p. 1926. [Contrib. from Bur. Ent., Insect. and Fungicide Bd., and Bur. Chem.]
1374. Ohlendorf, W. Studies of the pink bollworm [*Pectinophora gossypiella* Saunders] in Mexico. 64 p., illus. 1926. [Contrib. from Fed. Hort. Bd. in collab. with Bur. Ent.]
1393. Back, E.A., and Cotton, R.T. The granary weevil [*Sitophilus granarius* L.]. 36 p., illus. 1926.
1395. Nelson, Edward W. Bats in relation to the production of guano and the destruction of insects. 12 p., illus. 1926. [Contrib. from Bur. Biol. Survey.]
1397. Hunter, W.D. The pink bollworm [*Pectinophora gossypiella* Saunders]. 31 p., illus. 1926. [Contrib. from Bur. Ent. and Fed. Hort. Bd.]
1426. Rockwood, L.P. The clover root borer [*Hylastinus obscurus* Marsham]. 48 p., illus. 1926.
1428. Back, E.A., and Cotton, R.T. The cadelle [*Tenebroides mauritanicus* L.]. 42 p., illus. 1926.
1429. Clausen, C.P., King, J.L., and Teranishi, Cho. The parasites of *Popillia japonica* in Japan and Chosen (Korea) and their introduction into the United States. 56 p., illus. 1927.
1439. Hood, Clifford E. Fish oil, an efficient adhesive in arsenate-of-lead sprays. 22 p., illus. 1926.
1453. Simmons, Perez. The cheese skipper [*Rhopila casei* L.] as a pest in cured meats. 55 p., illus. 1927.
1469. Burgess, A.F., and Crossman, S.S. The satin moth [*Stilpnotia salicis* L.], a recently introduced pest. 23 p., illus. 1927.
1472. Parman, D.C., and Bishopp, F.C. Chemotropic tests with the screw worm fly [*Cochliomyia macellaria* Fab.]. 32 p. 1927. [Contrib. Bur. Ent. in coop. with Bur. Chem.]
1476. Caffrey, D.J., and Worthley, L.H. A progress report on the investigations of the European corn borer [*Pyrausta nubilalis* Hübn.]. 154 p., illus. 1927.
1482. Snapp, Oliver I., and Alden, C.H., et al. Experiments on the control of the plum curculio [*Conotrachelus nenuphar* Hbst.], brown rot, and scab, attacking the peach in Georgia. [Contrib. from Bur. Ent. in coop. with Bur. Plant Indus. and Ga. St. Bd. Ent.]
1487. Muesebeck, C.F.W., and Bohanian, S.M. A study in hyperparasitism, with particular reference to the parasites of *Apanteles melanascelus* (Ratzeburg.). 36 p., illus. 1927.

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1490. Snyder, Thomas E. Defects in timber caused by insects. 46 p., illus. 1927.

Circulars

(Succeeding Department Circulars)

7. Weigel, C. A., Young, H. D., and Swenson, R. L. An apparatus for the rapid vaporization of carbon disulphide. 8 p. 1927. [Contrib. from Bur. Ent., Bur. Chem. and Soils, and Off. Secy.]
14. Jones, D. W., and Caffrey, D. J. Status of imported parasites of the European corn borer. 7 p., illus. 1927.
18. Parman, L. C. Experimental dissemination of the tabanid egg parasite *Phanurus emersoni* Girault and biological notes on the species. 6 p., illus. 1928.
24. United States grades, color standards, and packing requirements for honey recommended by the United States Department of Agriculture. Prepared by the Bureau of Entomology and Agricultural Economics. 32 p., illus. 1927.

Department Circulars

(Succeeded by Circulars)

1-425

1919-1927

16. Lice, mites and cleanliness. Boys' and girls' poultry club work. 8 p., illus. 1919. [Contrib. from Bur. Anim. Indus.]
20. Common poultry diseases. Boys' and girls' poultry club work. 7 p. 1919. [Contrib. from Bur. Anim. Indus.]
35. Gilbert, W. W., and Popenoe, C. H. Diseases and insects of the home garden. 31 p., illus. 1919. [Contrib. from States Relations Service.]
40. Insect enemies and diseases of the tomato. 18 p., illus. 1919. [Contrib. from States Relations Service.] p. 3-9. Chittenden, F. H. Insects injurious to the tomato. [Repr. from States Relations Doc. 95.]
68. Dille, Alvin. How teachers may use publications on the control of diseases and insect enemies of the home garden. 4 p. 1919. [Contrib. from States Relations Service.]

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75. Blair, R. E. The work of the Yuma reclamation project experiment farm in 1918. 77 p., illus. 1920. [Contrib. from Bur. Plant Indus.]
79. Wood, H. P. Tropical fowl mite [*Liponyssus bursa* Berlese] in the United States, with notes on life history and control. 8 p., illus. 1920.
86. Hansen, Dan. The work of the Huntley reclamation project experiment farm in 1918. 32 p., illus. 1920. [Contrib. from Bur. Plant Indus.]
p. 16-17. Sugar-beet root-louse [*Pemphigus betae* Doane] control.
154. Campbell, R. E. Nicotine sulphate in a dust carrier against truck-crop insects. 15 p., illus. 1921.
162. Coad, B. R., and Cassidy, T. P. Some rules for poisoning the cotton boll weevil [*Anthonomus grandis* Boh.]. 4 p. 1921.
163. Coad, B. R., and Moreland, R. W. Dispersion of the boll weevil in 1920. 1 p. 1921.
[Map showing spread of Mexican cotton boll weevil from 1892-1920. 1921. Printed by the U. S. Geological Survey and distributed in connection with Department Circular 163.]
167. Burgess, A. F. The satin moth [*Stilpnotia salicis* L.], an introduced enemy of poplars and willows. 16 p., illus. 1921.
172. Packard, C. M., and Thompson, B. G. The range crane-flies [*Tipula simplex* Doane and *T. quaylei* Doane] in California. 8 p., illus. 1921.
184. Goding, Harry. State laws and court decisions relating to cattle tick [*Margaropus annulatus* Say] eradication. 71 p. 1921.
[Contrib. from Bur. Anim. Indus.]
201. Graf, J. E., and Boyden, B. L. Eradication of the sweet-potato weevil [*Cylas formicarius* Fab.] in Florida. (A report of progress.) 13 p., illus. 1921.
210. Coad, B. R., et al. Dispersion of the boll weevil [*Anthonomus grandis* Boh.] in 1921. 3 p., illus. 1922.
213. Wood, H. P. Eradication of lice on pigeons. 4 p. 1922.
216. Snapp, O. I., Turner, W. F., and Roberts, J. W. Controlling the curculio [*Conotrachelus nenuphar* Hbst.], brown rot, and scab in the peach belt of Georgia. 30 p., illus. 1922.
[Contrib. from Bur. Ent. and Bur. Plant Indus., in coop. with Ga. State Bd. Ent.]
218. Phillips, E. F. The occurrence of diseases of adult bees. 16 p., illus. 1922.
222. Phillips, E. F. The insulating value of commercial double-walled beehives. 10 p. 1922.

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224. White, W. H. Nicotine dust for control of the striped cucumber beetle [*Diabrotica vittata* Fab.]. (A preliminary report.) 8 p., illus. 1922.
226. Posey, G. B., and Boyce, J. S. White pine blister rust in the western United States. 7 p., illus. 1922. [Contrib. from Bur. Plant Indus.]
233. Perkins, F. W. Motion pictures of the United States Department of Agriculture. 13 p. 1922. [Contrib. from Div. Pubs.]
233. Ackerman, A. J. Preliminary report on control of San Jose Scale [*Aspidiotus perniciosus* Comst.] with lubricating-oil emulsion. 18 p., illus. 1923.
266. Bondy, F. F., et al. Dispersion of the boll weevil [*Anthonomus grandis* Boh.] in 1922. 6 p., illus. 1923.
274. Coad, B. R., and Cassidy, T. P. Dusting for the cotton boll weevil [*Anthonomus grandis* Boh.]. 3 p. 1923.
282. Chittenden, F. H. The Australian tomato weevil [*Desiantha nociva* Lea] introduced in the South: (A preliminary account.) 8 p., illus. 1923.
284. Sturtevant, A. P. The sterilization of American foulbrood combs. 29 p., illus. 1926.
286. Hoover, L. G. The chayote: Its culture and uses. 11 p., illus. 1923. P. 7. Diseases and pests.
287. Phillips, E. F. The occurrence of diseases of adult bees. II. 34 p., illus. 1923.
288. Bishopp, F. C. The puss caterpillar [*Megalopyge opercularis* S. & A.] and the effect of its sting on man. 14 p., illus. 1923.
294. Bishopp, F. C. The rat mite [*Liponyssus bacoti* Hirst]. attacking man. 4 p. 1923.
299. Swingle, W. T., Robinson, T. R., and May, Eugene, Jr. Quarantine procedure to safeguard the introduction of citrus plants. A system of aseptic plant propagation. 15 p., illus. 1924. [Contrib. from Bur. Plant Indus.]
301. Chamberlin, T. R. Introduction of parasites of the alfalfa weevil [*Phytonomus posticus* Gyll.] into the United States. 9 p., illus. 1924.
303. Yoder, P., and Ingram, J. W. Hot-water treatment of sugar cane for insect pests.-A precaution. 4 p., illus. 1923. [Contrib. from Bur. Plant Indus. and Bur. Ent.]

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321. Doolittle, S. P. Control of cucumber mosaic in the greenhouse. 6 p., illus. 1924. [Spread by *Aphis gossypii* Glover.]
334. Phillips, E. F. The bee louse, *Braula coeca*, in the United States. 12 p. 1925.
337. Yoder, P. A. Hot-water treatment of dormant and sprouted seed cane. 4 p., illus. 1925. [Contrib. from Bur. Plant Indus.]
338. Hall, M. C. Parasites and parasitic diseases of dogs. 28 p., illus. 1925. [Contrib. from Bur. Anim. Indus.]
339. Aune, Beyer. Work of the Belle Fourche Reclamation Project Experiment Station from 1919 to 1922, inclusive. 48 p. 1925. [Contrib. from Bur. Plant Indus.]
p. 10. Insect pests, grasshoppers, and armyworms.
342. Dean, H. K. Work of the Umatilla Reclamation Project Experiment Farm in 1920, 1921 and 1922. 24 p., illus. 1925. [Contrib. from Bur. Plant. Indus.]
p. 7. Weeds, insect pests, and animal diseases.
358. Show, F. E., and Kotok, E. I. Fire and the forest (California pine region.) 20 p., illus. 1925.
p. 7. Insects following fire.
361. Hunter, W. D. The cotton hopper, or so-called "cotton flea" [*Psallus seriatus* Reut.]. 15 p., illus. 1926. [Revised by J. W. Folsom after Dr. Hunter's death.]
363. Smith, L. B., and Hadley, C. H. The Japanese beetle [*Popillia japonica* Newm.]. 67 p., illus. 1926.
364. Sechrist, E. F. The color grading of honey. 8 p., illus. 1925. [Contrib. from Bur. Ent. in coop. with Bur. Agr. Econ.]
367. King, W. V., and Bradley, G. H. Airplane dusting in the control of malaria mosquitoes. 16 p., illus. 1926.
380. Weigel, C. A. Calcium cyanide as a fumigant for ornamental greenhouse plants. 16 p., illus. 1926.
388. Carsner, Hubanks. Resistance in sugar beets to curly top. 8 p. 1926. [Contrib. from Bur. Plant Indus.]
395. Peterson, Alvah, and Haeussler, C. J. Oriental peach moth [*Laspeyresia molesta* Busck]. 27 p., illus. 1926.
410. United States standards for honey recommended by the United States Department of Agriculture. 32 p., illus. 1927. [Contrib. from Bur. Ent. in coop. with Bur. Agr. Econ.]
411. Craighead, F. C., et al. Relation of insects to slash disposal. 12 p. 1927.

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[1] - 117 [Department] Reports 1862 - 1915

Nos. 1-58, 1862-1898, were issued without numbers. A list of titles and of numbers assigned later to these miscellaneous publications was printed on cover pages 3 and 4 of No. 59, which was the first to bear a number.

17. Address of Hon. Geo. B. Loring and other proceedings of the cotton convention held at Atlanta, Ga., Nov. 2, 1881. 35 p.
p. 19-29. Address of Prof. C.V. Riley. The cotton worm and the bollworm.
20. Hilgard, F.W., Jones, T.C., and Furnas, R.W. Report on the climatic and agricultural features and the agricultural practices and needs of the arid regions of the Pacific Slope with notes on Arizona and New Mexico. 122 p. 1882.
p. 152-153. Insect pests.
p. 155-171. Hilgard, E.W. The Phylloxera in California.
p. 168-171. Cooke, Matthew. Horticultural quarantine rules.
22. Proceedings of a convention of agriculturists held in the Department of Agriculture January 10th to 18th, 1882. 204 p.
p. 188-190. Riley, C. V. Grafting the vine and grape Phylloxera.
34. Taylor, Thomas. Microscopic observations. Internal parasites in domestic fowls, and butter and fats. 7 p., illus.
[Cytolichus sarcoptoides (Megnin) and Laminosioptes gallinorum (Megnin) mentioned.]
51. Koobele, Albert. Studies of parasitic and predaceous insects in New Zealand, Australia and adjacent islands. Made at the request of the California State Board of Horticulture. 39 p. 1893.
57. Proceedings of the National convention for the suppression of insect pests and plant diseases by legislation, held at Washington, D. C., March 5 and 6, 1897. Edited by B. T. Galloway. 31 p. 1897.
63. The work of the agricultural experiment stations on tobacco. Abstracted by J. I. Schulte, with an introduction and comments by Milton Whitney, Chief, Division of Soils. 48 p. 1900.
p. 37-38. Insects affecting tobacco.
p. 38-39. Tobacco as an insecticide.
69. Progress of the beet sugar industry in the United States in 1900. 178 p. 1901.
p. 68-71. Insects and diseases affecting the sugar beet.
p. 83-87. Forbes, S.A. Economic entomology of the sugar beet.
p. 85-87. Gillette, C. P. The beet army worm [Laphygma exiguella Hbn.].
73. Report of the Secretary of Agriculture, 1902. 96 p. 1902.
p. 61-69. Division of Entomology.
74. Reports of the beet sugar industry in the United States in 1902. 221 p., illus. 1903.
p. 157-221. Chittenden, F. H. The principal insect enemies of the sugar beet.

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76. Report of the Secretary of Agriculture, 1903. 99 p. 1903.
p. 16, Texas fever.
p. 61-66. Division of Entomology
p. 90. Boll weevil.
78. Cook, O. F. An enemy [*Ectatomma tuberculatum* Oliv.] of the cotton boll weevil, 7 p. 1904.
79. Report of the Secretary of Agriculture, 1904. 99 p. 1904.
p. 17-18. Cattle scab or mange.
p. 29. Weevil resistant cotton.
p. 66-73. Bureau of Entomology.
81. Report of the Secretary of Agriculture, 1905. 100 p. 1905.
p. 59-67. Bureau of Entomology.
83. Report of the Secretary of Agriculture, 1906. 94 p. 1906.
p. 62-68. Bureau of Entomology.
85. Report of the Secretary of Agriculture, 1907. 100 p. 1908.
p. 62-70. Bureau of Entomology.
87. Report of the Secretary of Agriculture, 1908. Abridged edition.
100 p. 1909.
p. 50-56. Bureau of Entomology.
91. Report of the Secretary of Agriculture, 1909. Abridged edition.
100 p. 1910.
p. 74-79. Bureau of Entomology.
92. Progress of the beet-sugar industry in the United States in 1909.
87 p. 1910.
p. 79-87. Shaw, H. B. The curly-top of beets. [Caused by *Eutettix tenellus* Baker.]
93. Report of the Secretary of Agriculture, 1910. 98 p. 1911.
p. 71-76. Bureau of Entomology.
99. Hopkins, A. D. Classification of the Cryphalinae, with descriptions of new genera and species. 75 p., illus. 1915.
101. Baker, A. C. The woolly apple aphid [*Eriosoma lanigerum* Hausm.].
55 p., illus. 1915.
102. Pierce, W. D. Descriptions of some weevils reared from cotton in Peru. 16 p., illus. 1915.
107. Craighead, F. C. Contributions towards a classification and biology of the North American Cerambycidae. Larvae of the Prioninae.
24 p., illus. 1915.
108. Banks, Nathan. The Acarina or mites. A review of the group for the use of economic entomologists. 153 p., illus. 1915.

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Farmers' Bulletins

7. Spraying fruits for insect pests and fungous diseases, with a special consideration of the subject in its relation to public health. 20 p. 1892. [Contrib. from Div. Ent. and Div. Veg. Phys. and Path.]
13. Saunders, William. Cranberry culture. 16 p. 1894. [Contrib. from Div. Gard. and Grounds.]
p. 12-16. Injurious insects.
19. Marlatt, C.L. Important insecticides: Directions for their preparation and use. 20 p. 1893. Rev. 1893, 23 p.; 1897, 32 p.; 1898, 32 p. (Superseded by no. 127.)
26. Dugger, J.F. Sweet potatoes: Culture and uses. 30 p., illus. 1897. [Contrib. from Off. Expt. Sta.]
p. 23-24. Insect enemies.
33. Smith, E.F. Peach growing for market. 24 p., illus. 1895. [Contrib. from Div. Veg. Phys. and Path.]
p. 14-19. Fungous diseases and insect pests.
39. Watts, R.L. Onion culture. 31 p., illus. 1896. [Contrib. from Off. Expt. Sta.]
p. 27-28. Two important enemies of the onion, onion maggot [*Phorbia ceparum* Meigen] and onion smut.
45. Chittenden, F.H. Some insects injurious to stored grain. 24 p., illus. 1896. Rev. 1897.
47. Howard, L.O. Insects affecting the cotton plant. Reprinted with revision by the author from Bulletin 33, Off. Expt. Sta. 32 p., illus. 1897. Corrected to Apr. 2, 1909, 20 p., illus.
53. Falconer, William. How to grow mushrooms. 20 p., illus. 1897. [Contrib. from Div. Veg. Phys. and Path.]
p. 18-19. Insect and other animal enemies.
54. Beal, F.E.L. Some common birds in their relation to agriculture. 40 p., illus. 1897. [Contrib. from Bur. Biol. Surv.] Rev. 1898, 40 p., illus.; 1904, 48 p., illus.
59. Benton, Frank. Bee keeping. 32 p., illus. 1897. Rev. 1905, 48 p., illus.
61. Handy, R.E. Asparagus culture. 40 p., illus. 1897.
p. 34-39. Chittenden, F.H. Insect enemies.
70. Marlatt, C.L. The principal insect enemies of the grape. Reprinted from original plates from the Yearbook of the U.S. Dept. Agr. for 1895. 24 p., illus. 1898.
76. Voorhees, E.B. Tomato growing. 30 p. 1898. [Contrib. from Off. Expt. Sta.]
p. 26-27. Insect pests and remedies.
80. Marlatt, C.L. The peach twig borer [*Anarsia lineatella* Zell.]: An important enemy of stone fruits. 16 p., illus. 1898.
82. Butterweck, O.C. Culture of tobacco. 24 p. 1898. [Contrib. from Div. Soils.]
p. 22. Insect pests.

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Farmers' Bulletins (Cont'd.)

87. Experiment Station Work VIII. 32 p., illus. 1899. [Contrib. from Off. Expt. Sta.]
p. 28-30. The toad as a friend of the farmer.
92. Experiment Station Work IX. 30 p. 1899. [Contrib. from Off. Expt. Sta.]
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p. 19-21. Protecting cows from flies.
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244. Experiment Station Work XXXIII. 32 p., illus. 1906. [Contrib. from Off. Expt. Sta.]
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p. 23. Precautions to avoid attacks of insects and diseases.
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p. 15-18. Diseases and insects resistant crops.
p. 20-21. Cultural methods of controlling bill-bugs and the corn root-louse. [*Aphis maidi-radici* Forbes].
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p. 30-31. Spraying for scale insects in the fall.
264. Howard, L.O. The brown-tail moth [*Euproctis chrysorrhoea* L.] and how to control it. 22 p., illus. 1906.
267. Experiment Station Work XXXVII. 32 p., illus. 1906. [Contrib. from Off. Expt. Sta.]
p. 28-29. Protecting cows from flies.
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p. 25-26. Dips as lice killers.
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p. 12-13. Injury by Bordeaux mixture.
307. Webster, P.J. Roselle: Its culture and uses. 16 p., illus. 1907. [Contrib. from Bur. Plant Indus.]
p. 16. Fungous diseases and insect enemies.
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p. 29-30. Eradication of cattle ticks [*Margaropus annulatus* Say].
313. Hartley, C.P. Harvesting and storing corn. 32 p., illus. 1907. [Contrib. from Bur. Plant Indus.]
p. 26-27. Protecting the crop from insects, mice and rats.

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314. Bennett, R.L. A method of breeding early cotton to escape boll-weevil damage. 30 p., illus. 1908. [Contrib. from Bur. Plant Indus.]
319. Knapp, S.A. Demonstration work in cooperation with southern farmers. 22 p. 1908. [Contrib. from Bur. Plant Indus.]
p. 10-11. The cultural system of producing cotton under boll-weevil conditions.
320. Experiment Station Work XLVI. 32 p. 1908. [Contrib. from Off. Expt. Sta.]
p. 22. Does it pay to spray potatoes?
322. Ball, C.R., and Leidigh, A.H. Milo as dry-land grain crop. 23 p., illus. 1908. [Contrib. from Bur. Plant Indus.]
p. 21-23. Insect enemies and fungous diseases.
323. Smith, C.B. Clover farming on the sandy jack-pine lands of the north. 24 p., illus. 1908. [Contrib. from Bur. Plant Indus.]
p. 19-20. The clover-flower midge [(Cecidomyia) Dasyneura leguminicola Lint.].
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p. 26. Insects.
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339. Westgate, J.M. Alfalfa. 48 p., illus. 1908. [Contrib. from Bur. Plant Indus.]
p. 31. Alfalfa for bees.
p. 40-41. Insects.
341. Hubbard, W.F., and Mell, C.D. The basket willow. 45 p., illus. 1909. [Contrib. from Forest Service.]
p. 22-23. Insects.
344. Hunter, W.D. The boll weevil [Anthonomus grandis Boh.] problem, with special reference to means of reducing damage. 46 p., illus. 1907.
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p. 35. Insects.
356. Beattie, W.R. Peanuts. 40 p., illus. 1909. [Contrib. from Bur. Plant Indus.]
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374. Experiment Station Work LIII. 32 p., illus. 1909. [Contrib. from Off. Expt. Sta.] p. 30-31. Food of the crow blackbird.
378. Graybill, H.W. Methods of exterminating the Texas-fever tick [*Margaropus annulatus* Say]. 30 p., illus. 1909. [Contrib. from Bur. Anim. Indus.]
397. Phillips, E.F. Bees. 44 p., illus. 1910.
407. Corbett, L.C. The potato as a truck crop. 24 p., illus. 1910. [Contrib. from Bur. Plant Indus.] p. 17-20. Spraying. illus.
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415. Hartley, C.P. Seed corn. 12 p., illus. 1910. [Contrib. from Bur. Plant Indus.] Rev. 1911, 13 p.; 1917, 11 p. p. 10. Destroying weevils or grain moths.
416. Frear, William, and Hibshman, E.K. The production of cigar-leaf tobacco in Pennsylvania. 24 p., illus. 1910. [Contrib. from Bur. Plant Indus.] Rev. 1917, 24 p., illus.; 1918, 20 p., illus.; 1921, 20 p., illus.; 1922, 20 p., illus. p. 22-23. Tobacco diseases and pests.
422. Knapp, S.A. Demonstration work on southern farms. 19 p., illus. 1910. [Contrib. from Bur. Plant Indus.] p. 8-12. The cultural system for producing cotton under boll-weevil conditions.
424. Warburton, C.W. Oats: Growing the crop. 44 p., illus. 1910. [Contrib. from Bur. Plant Indus.] Rev. 1916, 42 p. p. 42-43. Insects injurious to oats.
427. Derr, H.B. Barley culture in the Southern States. 16 p., illus. 1910. [Contrib. from Bur. Plant Indus.] p. 13-14. Insects that attack barley.
431. Beattie, W.R. The peanut. 39 p., illus. 1911. [Contrib. from Bur. Plant Indus.] p. 37. Insects injurious to the peanut.
433. Corbett, L.C. Cabbage. 23 p., illus. 1911. [Contrib. from Bur. Plant Indus.] p. 9-10. Enemies.
434. Beattie, W.R. The home production of onion seed and sets. 24 p., illus. 1911. [Contrib. from Bur. Plant Indus.] Reprint, 1918, 21 p., illus.; Rev. 1925, 14 p., illus. p. 22-24. Enemies of the onion.
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p. 27. Insects and diseases.
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Spraying peaches for the control of brown-rot, scab, and curculio [*Conotrachelus nemophar* Herbst]. 24 p., illus. 1911.
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453. Marlatt, C.L. Danger of general spread of the gipsy [*Porthetria dispar* L.] and brown-tail [*Euproctis chrysorrhoea* L.] moths through imported nursery stock. 22 p., illus., 1911.
455. Westgate, J.M., and Hillman, F.H. Red clover. 8 p., illus. 1911.
Reprint with changes, 1922, 45 p., illus.
p. 34. Relation of pollinizing insects to the production of red clover seeds.
p. 37-39. Webster, F.M. Insect enemies of red clover.
456. McAtee, W.L. Our grosbeaks and their value to agriculture. 14 p., illus. 1911. [Contrib. from Bur. Biol. Survey.]
457. Experiment Station Work LXIV. 24 p., illus. 1911. [Contrib. from Off. Expt. Sta.]
p. 11-14. Fighting the boll-weevil [*Anthonomus grandis* Boh.] by clean farming.
459. Howard, L.O. House flies. 16 p., illus. 1911.
463. Stiles, C.W., and Lumsden, L.L. The sanitary privy. 32 p., illus. 1911. Rev. 1916, 28 p., illus. [Contrib. from Pub. Health and Marine Hospital Service.]
p. 12. Human excrement as a breeding place for flies.
467. Metcalf, Haven, and Collins, J.F. The control of the chestnut bark disease. 24 p., illus. 1911. [Contrib. from Bur. Plant Indus.]
p. 9-10. Means of spread and entrance helped by *Agrilus lineatus* Weber.
468. Jackson, E.R. Forestry in nature study. 43 p., illus. 1911. [Contrib. from Forest Service.]
p. 23-24. Enemies of the forest.

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476. Hopkins, A.D. The dying of pine in the Southern States, cause, extent and remedy. [Ravages of *Dendroctonus frontalis* Dietz.] 15 p., illus. 1911.
478. Page, L.W., et al. How to prevent typhoid fever. 8 p. 1911.
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p. 5-8. Screening cabbage beds for root maggots [*Pegomyia* spp. et al.]
p. 8-11. Does it pay to spray apple orchards?
481. Concrete construction on the live-stock farm. 32 p., illus. 1912.
p. 26-32. Concrete dipping vats. illus. [Contrib. from Bur. Anim. Indus.]
482. Brackett, G.B. The pear and how to grow it. 31 p., illus. 1912. [Contrib. from Bur. Plant Indus.] Rev. 1923, 32 p., illus.
p. 20-22. Diseases and insect enemies.
484. Birdseye, Clarence. Some common mammals of western Montana in relation to agriculture and spotted fever. 46 p., illus. 1912. [Contrib. from Bur. Biol. Survey.]
p. 20-21. Chipmunks as tick hosts.
p. 24-25. Side-striped ground squirrels as tick hosts.
485. Westgate, J.M., and Vinall, H.N. Sweet clover. 39 p., illus. 1912. [Contrib. from Bur. Plant Indus.]
p. 33. Enemies of sweet clover.
488. Harter, L.L. Diseases of cabbage and related crops and their control. 32 p., illus. 1912. [Contrib. from Bur. Plant Indus.]
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489. Spaulding, Perley, and Field, E.C. Two dangerous imported plant diseases. 29 p., illus. 1912. [Contrib. from Bur. Plant Indus.]
p. 26-29. Present method of inspection for insects entirely inadequate when applied to fungous plant diseases.
491. Burritt, M.C. The profitable management of the small apple orchard on the general farm. 22 p., illus. 1912. [Contrib. from Bur. Plant Indus.] Rev. 1917, 20 p., illus.
p. 18-20. Spraying.
492. Quaintance, A.L., and Scott, W.M. The more important insect and fungous enemies of the fruit and foliage of the apple. 48 p., illus. 1912. [Contrib. from Bur. Ent. in coop. with Bur. Plant Indus.]
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p. 29-31. Webster, F.M. Insect enemies of the alfalfa seed crop. illus. [Contrib. from Bur. Ent.]
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501. Cook, O.F. Cotton improvement under weevil conditions. 22 p., illus. 1912. [Contrib. from Bur. Plant Indus.] Rev. 1920, 22 p.; 1924, 17 p.
503. Demuth, G.S. Comb Honey. 47 p., illus. 1912.
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517. Experiment Station Work LXXII. 24 p. 1912. [Contrib. from Off. Expt. Sta.]
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528. Lemon, H.M. Hints for poultry raisers. 12 p., illus. 1912. [Contrib. from Bur. Anim. Indus.] Rev. 1918, 12 p., illus.; 1921, 12 p., illus. p. 10, Lice and mites.
530. Salmon, D.E. Important poultry diseases. 36 p. 1913. [Contrib. from Bur. Anim. Indus.]
p. 5-6. Lice powders and their application.
532. Experiment Station Work LXXV. 24 p., illus. 1913. [Contrib. from Off. Expt. Sta.]
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537. Hartley, C.P. How to grow an acre of corn. 21 p., illus. 1913. [Contrib. from Bur. Plant Indus.]
p. 15-16. Combating cutworms.
540. Bishopp, F.C. The stable fly [*Stomoxys calcitrans* L.]. 28 p., illus. 1913. Reprint with changes, 1917, 26 p., illus.
543. Davis, J.J. Common white grubs [*Lachnosterna* spp.]. 20 p., illus. 1913.
547. Howard, L.O. The yellow-fever mosquito [*Aedes calopus* Meig.]. 16 p., illus. 1913. (Superseded by F.B. 1354.)
549. Experiment Station Work LXXVI. 24 p., illus. 1913. [Contrib. from Off. Expt. Sta.]
p. 15-16. The meadowlark from the farmer's standpoint.
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564. Burgess, A.F. The gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.], with suggestions for their control. 24 p., illus. 1914.

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581. The agricultural outlook. 50 p. 1914. [Contrib. from Bur. Statistics in coop. with Plant Indus.] p. 11. Weevil in Argentine corn.
587. Lantz, D.E. Economic value of North American skunks. 22 p., illus. 1914. [Contrib. from Bur. Biol. Survey.] Rev. 1917, 24 p., illus.; 1923, 24 p., illus. p. 7-8. Food of skunks.
595. Morgan, A.C., and Parman, D.C. Arsenate of lead as an insecticide against the tobacco hornworms [*Phlegethontius quinquemaculata* Haw. and *P. sexta* Joh.] in the dark-tobacco district. 8 p., illus. 1914.
598. The agricultural outlook. 21 p. 1914. [Contrib. from Bur. Statistics.] p. 8-9. Honeybees.
602. Kelly, Ernest. Production of clean milk. 22 p., illus. 1919. [Contrib. from Bur. Anim. Indus.] Rev. 1917, 19 p., illus.; 1919, 22 p., illus.; 1923, 23 p., illus.; 1925, 17 p., illus. p. 8-9. Flies.
603. Chapin, R.A. Arsenical cattle dips: methods of preparation and directions for use. 16 p. 1914. [Contrib. from Bur. Anim. Indus.]
605. Vinall, H.N. Sudan grass as a forage crop. 20 p., illus. 1914. [Contrib. from Bur. Plant Indus.] p. 18. Enemies.
606. Lane, C.H., and Banks, Nathan. Collection and preservation of insects and other material for use in the study of agriculture. 18 p., illus. 1914. [Contrib. from Bur. Ent. in coop. with Off. Expt. Sta.] Rev. 1917, 22 p., illus.
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613. Van Fleet, Walter. Goldenseal under cultivation. 15 p., illus. 1914. [Contrib. from Bur. Plant Indus.] p. 13. Diseases and pests.
618. Townsend, C.O. Leaf-spot, a disease of the sugar beet. 18 p., illus. 1914. [Contrib. from Bur. Plant Indus.] Rev. 1922, 19 p. p. 8. Insects as disseminators.

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620. The agricultural outlook. 39 p., illus. 1914. [Contrib. from Bur. Crop Estimates] Rev. 1918, 30 p., illus.; 1923, 30 p., illus.; 1926, 28 p., illus.; p. 6-7. Honey production.
626. Howard, L.O. The carpet beetle or "buffalo moth" [*Anthrenus scrophulariae* L.]. 4 p., illus. 1914.
627. Marlatt, C.L. The house centipede [*Scutigera forceps* Raf.]. 4 p., illus. 1914.
630. Beal, F.E.L. Some common birds useful to the farmer. 27 p., illus. 1915. [Contrib. from Bur. Biol. Survey] Rev. Mar., 1918; May, 1923; Apr., 1926.
634. Ainslie, G.G. The larger corn stalk-borer [*Diatraea saccharalis* Fab.]. 8 p., illus. 1914.
636. Urbahns, T.D. The chalcis-fly [*Bruchophagus funebris* How.] in alfalfa seed. 10 p., illus. 1914.
637. Webster, F.M. The grasshopper problem and alfalfa culture. 10 p., illus. 1915.
639. McClain, J.H. Eradication of the cattle tick [*Margaropus annulatus* Say] necessary for profitable dairying. 4 p., illus. 1914. [Contrib. from Bur. Anim. Indus.]
640. Webster, F.M. The Hessian fly [*Phytophaga destructor* Say]. 20 p., illus. 1915.
649. Webster, F.M. Alfalfa attacked by the clover-root curculio [*Sitones hispidulas* Fab.]. 8 p., illus. 1915.
650. Quaintance, A.L. The San Jose scale [*Aspidiotus perniciosus* Comst.] and its control. 27 p., illus. 1915. Rev. 1919, 31 p., illus.; Reprint with changes, 1926, 22 p., illus.
653. Hunt, C.L., and Atwater, H.W. Honey and its uses in the home. 26 p. 1915. [Contrib. from Off. Expt. Sta.] Rev. 1922, 26 p.; Reprint with changes, 1926, 22 p.
657. Webster, F.M. The chinch bug [*Blissus leucopterus* Say]. 28 p., illus. 1915.
658. Marlatt, C.L. Cockroaches. 15 p., illus. 1915. Rev. 1917, 15 p.
659. Marlatt, C.L. The true clothes moths. 8 p., illus. 1915.
662. Quaintance, A.L. The apple-tree tent caterpillar [*Malacosoma americana* Fab.]. 10 p., illus. 1915. Rev. 1918, 12 p., illus.; Reprint with changes, 1921, 12 p., illus.
668. Chittenden, F.H. The squash-vine borer [*Melittia satyriniformis* Hbn.]. 6 p., illus. 1915.
671. Chittenden, F.H. Harvest mites, or "chiggers" [*Trombidium* spp.]. 7 p., illus. 1915.
674. Horton, J.R. Control of the citrus aphid [(*Euthrips*) *Scirtothrips citri* Moulton] in California and Arizona. 15 p., illus. 1915.
675. Brooks, F.E. The roundheaded apple-tree borer [*Saperda candida* Fab.]. 20 p., illus. 1915. Rev. 1919, 21 p., illus.
679. Howard, L.O. House flies. 22 p., illus. 1915. (Supersedes F.B. 459.)
681. Marlatt, C.L. The silverfish [*Lepisma saccharina* L.]. 4 p., illus. 1915.

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683. Bishopp, F.C. Fleas as pests to man and animals, with suggestions for their control. 15 p., illus. 1915. (Superseded by F.B. 897.).
685. Fletcher, W.F. The native persimmon. 28 p., illus. 1915. [Contrib. from Bur. Plant Indus.]
p. 20-21. Diseases and insect pests.
690. Vinall, H.N. The field pea as a forage crop. 24 p., illus. 1915. [Contrib. from Bur. Plant Indus.] Rev. 1917. 26 p., illus.
p. 21-22. Insect enemies.
691. Milliken, F.B. Grasshoppers and their control on sugar beets and truck crops. 16 p., illus. 1915. Rev. 1920, 20 p., illus.; 1923, 20 p., illus.
693. Piper, C.V. Bur clover. 14 p., illus. 1915. [Contrib. from Bur. Plant Indus.]
p. 14. Insect enemies.
694. Van Fleet, Walter. The cultivation of peppermint and spearmint. 13 p. 1915. [Contrib. from Bur. Plant Indus.] Rev. reprint, 1917, 14 p.
p. 7-8. Diseases and pests.
695. Phillips, E.F. Outdoor wintering of bees. 12 p., 1915.
699. Howard, L.O., and Popenoe, C.H. Hydrocyanic-acid gas against household insects. 8 p., 1916.
701. Howard, L.O., and Chittenden, F.H. The bagworm [*Thryidopteryx ephemeraeformis* Haworth], an injurious shade-tree insect. 12 p., illus. 1916.
705. Howard, L.O., and Chittenden, F.H. The catalpa sphinx [*Ceratomia catalpae* Ed.]. 9 p., illus. 1916.
708. Howard, L.O., and Chittenden, F.H. The leopard moth [*Zeuzera pyrina* Fab.]: A dangerous imported insect enemy of shade trees. 12 p., illus. 1916.
709. Husmann, G.C. Muscardine grapes. 23 p., illus. 1916. [Contrib. from Bur. Plant Indus.]
p. 23. Insect enemies and diseases.
713. Imes, Marion. Sheep scab. 36 p., illus. 1916. [Contrib. from Bur. Anim. Indus.] Rev. 1920, 36 p., illus.; corrected 36 p., illus. 1923.; Rev. 1927, 30 p., illus.
721. Chittenden, F.H., and Quaintance, A.L. The rose-chaffer [*Macrodytus subspinosus* Fab.]: A destructive garden and vineyard pest. 8 p., illus. 1916.
722. Quaintance, A.L. The leaf blister mite [*Eriophyes pyri* Pagenstecher] of pear and apple. 6 p., illus., 1916.
723. Quaintance, A.L., and Sasser, E.R. The oyster-shell scale [*Lepidosaphes ulmi* L.] and the scurfy scale [*Chionaspis furfura* Fitch]. 16 p., illus. 1916. Reprint with changes, 1927, 16 p., illus.
725. Hyslop, J.A. Wireworms destructive to cereal and forage crops. 12 p., illus. 1916.

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731. Walton, W.R. The true army worm [*Heliophila*] *Cirphis unipuncta* Haw.] and its control. 12 p., illus. 1916. Rev. 1925, 12 p., illus.
733. Gibson, E.H. The corn and cotton wireworm [*Horistonotus uhleri* Horn] in its relation to cereal and forage crops, with control measures. 8 p., illus. 1916.
734. Bishopp, F.H. Flytraps and their operation. 14 p., illus. 1916. Rev. 1919, 16 p., illus.; 1921, 16 p., illus.; 1922, 16 p., illus.; Rev. reprint, 1925, 14 p., illus.
735. McGregor, E.A. The red spider [*Tetranychus telarius* L.] on cotton and how to control it. 12 p., illus. 1916. (Superseded by F.B. 831.)
736. Whetzell, H.H., et al. Ginseng diseases and their control. 23 p., illus. 1916. [Contrib. from Bur. Plant Indus.] p. 15. Spray injury. p. 19-20. Spraying.
737. Gibson, E.H. The clover leafhopper [*Agallia sanguinolenta* Prov.] and its control in the Central States. 8 p., illus. 1916.
739. Walton, W.R., and Davis, J.J. Cutworms and their control in corn and other cereal crops. 4 p., illus. 1916. Rev. 1920, 7 p., illus.; Corrected and reprinted, 1922, 7 p., illus.
740. Marlatt, C.L. House ants: Kinds and methods of control. 12 p., illus. 1916. Rev. reprint, 1921, 14 p., illus.; 1922, 14 p., illus.; Rev. 1926, 15 p., illus.
741. Reeves, G.I., et al. The alfalfa weevil [*Phytonomus posticus* Gyll.] and methods of controlling it. 16 p., illus. 1916.
747. Walton, W.R. Grasshopper control in relation to cereal and forage crops. 20 p., illus., 1916. Rev. reprint, 1919, 20 p., illus.; Rev. 1920, 20 p., illus.; 1922, 18 p., illus.
752. Walton, W.R., and Luginbill, Philip. The fall army worm [*Laphygma frugiperda* S.&A.] or "grass worm" and its control. 16 p., illus., 1916. Rev. 1922, 16 p., illus.; 1924, 16 p., illus.
754. Marlatt, C.L. The bedbug [*Cimex lectularius* L.]. 12 p., illus. 1916. Rev. 1918, 16 p., illus.
755. Beal, F.E.L., et al. Common birds of southeastern United States in relation to agriculture. 40 p., illus. 1916. Rev. 1918, 44 p., illus.; 1927, 44 p., illus.
759. Snyder, T.E. "White ants" as pests in the United States and methods of preventing their damage. 20 p., illus. 1916. (Superseded by F.B. 1037.)
762. Milliken, F.B. The false chinch bug [*Nysius ericae* Schill.] and measures for controlling it. 4 p., illus. 1916. Rev. 1922, 4 p., illus.
763. Brooks, F.E. Orchard barkbeetles and pinhole bores, and how to control them. 16 p., illus. 1916. Rev. 1918, 16 p., illus.
766. Chittenden, F.H. The common cabbage worm [*Pontia rapae* L.]. 16 p., illus. 1916. Reprint with corrections, 1917. (Superseded by F.B. 1461.)

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778. Hopkins, A.D., and Snyder, T.F. Powder-post damage by *Lyctus* beetles to seasoned wood. 20 p., illus. 1917.
789. Popenoe, C.H. Mushroom pests and how to control them. 16 p., illus. 1917. Rev. 1925, 6 p., illus.
793. Vinall, H.W. Foxtail millet, its culture and utilization in the United States. 28 p., illus. 1917. [Contrib. from Bur. Plant Indus.]
p. 27-28. Insect enemies of millet. [Contrib. from Bur. Ent.]
798. Imes, Marion. The sheep tick [*Melophagus ovinus* L.] and its eradication by dipping. 31 p., illus. 1917. [Contrib. from Bur. Anim. Indus.] Rev. 1923, 30 p., illus.; 1928 31 p., illus.
799. Hinds, W.E. Carbon disulphid as an insecticide. 21 p., 1917. Rev. 1924, 22 p.; Reprint 1925, 13 p.
801. Bishopp, F.C., and Wood, H.P. Mites and lice on poultry. 27 p., illus. 1917. Rev. 1919, 28 p., illus.; 1920, 32 p., illus.; 1924, 32 p., illus.; 1926, 18 p., illus.
804. Quaintance, A.L., and Baker, A.J. Aphids injurious to orchard fruits, currant, gooseberry, and grape. 42 p., illus. 1917.
819. Morgan, A.C., and McDonough, F.L. The tobacco budworm [*Chloridea virescens* Fab.] and its control. 11 p., illus. 1917. Rev. by Chamberlin, F.S., 1923, 12 p., illus.
831. McGregor, E.A. The red spider [*Tetranychus telarius* L.] on cotton and how to control it. 16 p., illus. 1917. (Supersedes F.B. 735.)
835. Walton, W.R. How to detect outbreaks of insects and save the grain crops. 24 p., illus. 1917. Rev. 1920, 24 p., illus.; 1924, 24 p., illus.
837. Chittenden, F.H. The asparagus beetles [*Crioceris asparagi* L. and *C. duodecimpunctata* L.] and their control. 15 p., illus. 1917.
843. Gill, J.B. Important pecan insects and their control. 48 p., illus. 1917.
845. Burgess, A.F. The gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.] and their control. 28 p., illus. 1917.
846. Runner, G.A. The tobacco beetle [*Lasioderma serricorne* Fab.] and how to prevent damage by it. 23 p., illus. 1917. Rev. 1922, 24 p., illus.
848. Hunter, W. D. Boll-weevil [*Anthonomus grandis* Boh.] problem with special reference to means of reducing the damage. 40 p., illus. 1917.
851. Howard, L.O., and Hutchison, R.H. The house fly [*Musca domestica* L.] 23 p., illus. 1917. Reprint with changes 1922, 22 p., illus. (Superseded by F. B. 1408.)
856. Orton, W.A., and Chittenden, F.H. Control of diseases and insects of the home vegetable garden. 72 p., illus. 1917. [Contrib. from Bur. Plant Indus. in coop. with Bur. Ent.]

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857. Bishopp, F.C., Mitchell, J.D., and Parman, D.C. Screw-worms [*Chrysomya macellaria* Fab.] and other maggots affecting animals. 20 p., illus. 1917. Rev. 1922, 20 p., illus.; 1923, 16 p., illus.; Reprint with changes, 1924, 14 p., illus.; Rev. 1926, 14 p., illus.
860. Scammell, H.B. Cranberry insect problems and suggestions for solving them. 45 p., illus. 1917. (Supersedes F.B. 178.)
862. Woglum, R.S., and Neuls, J.D. The common mealybug [*Pseudococcus citri* Risso] and its control in California. 16 p., illus. 1917.
867. Morgan, A.C. Tobacco hornworm (*Phlegethontius sexta* Joh. and *P. quinquemaculata* Haw.) insecticide: Recommendations for use of powdered arsenate of lead in dark-tobacco district. 11 p., illus. 1917.
868. Chittenden, F.H. How to increase the potato crop by spraying. 22 p., illus. 1917. [In coop. with Bur. Plant Indus.] Rev. 1920, 24 p., illus.
872. Bishopp, F.C. The bollworm or corn earworm [*Chloridea obsoleta* Fab.]. 16 p., illus. 1917. Rev. 1922, 16 p., illus.
875. Phillips, W.J., and Fox, Henry. The rough-headed corn-stalk-beetle [(*Ligyra*) *Euethola rugiceps* Lec.] in the Southern States and its control. 12 p., illus. 1917. Rev. 1918, 12 p., illus.; 1925, 12 p., illus.
880. Sasser, E.R., and Borden, A.D. Fumigation of ornamental greenhouse plants with hydrocyanic-acid gas. 20 p., illus. 1917.
887. Darrow, G.M. Raspberry culture. 45 p., illus. 1917. [Contrib. from Bur. Plant Indus.] Rev. 1925, 38 p., illus. p. 33. Diseases and insects.
889. Slocum, R.R. Back-yard poultry keeping. 22 p., illus. 1917. [Contrib. from Bur. Anim. Indus.] p. 19-20. Lice and mites.
890. Pierce, W.D. How insects affect the cotton plant and means of combating them. 28 p., illus. 1917. Rev. 1920, 28 p., illus.; 1922, 28 p., illus.; 1924, 25 p., illus.
891. Davis, J.J. The corn root-aphis [*Aphis maidi-radici* Forbes] and methods of controlling it. 12 p., illus. 1917.
897. Bishopp, F.C. Fleas and their control. 16 p., illus. 1917. Rev. 1921, 15 p., illus.; 1926, 16 p., illus. (Supersedes F.B. 683.)
902. Back, E.A. The silverfish, or "slicker" [*Lepisma saccharina* Fab.], an injurious household insect. 4 p., illus. 1917.
908. Quaintance, A.L., and Siegler, E.H. Information for fruit growers about insecticides, spraying apparatus and important insect pests. 99 p., illus. 1918. Rev. 1920, 99 p., illus.; Reprint with changes, 1924, 100 p., illus.
909. Imes, Marion. Cattle lice and how to eradicate them. 27 p., illus. 1918. [Contrib. from Bur. Anim. Indus.] Rev. 1924, 24 p., illus.
914. Chittenden, F.H. Control of the melon aphis [*Aphis gossypii* Glover] 16 p., illus. 1918.

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915. Kyle, C.H. How to reduce weevil waste in Southern corn. 8 p., illus. 1918. [Contrib. from Bur. Plant Indus.]
923. Woglum, R.S. Fumigation of citrus trees. 31 p., illus. 1918.
928. Horton, J.R. Control of the Argentine ant [*Iridomyrmex humilis* Mayr] in orange groves. 20 p., illus. 1918.
933. Yothers, W.W. Spraying for control of insects and mites attacking citrus trees in Florida. 39 p., illus. 1918. Rev. 1922, 44p., illus.; Reprint with changes, 1924, 38 p., illus.; 1927, 38 p., illus.
940. Davis, J.J. Common white grubs. 28 p., illus. 1918. Rev. 1922, 30 p., illus.; 1924, 31 p., illus. (Supersedes FB 543.)
942. Creel, C.W., and Rockwood, L.P. Controlling the clover-flower midge [*Dasyneura leguminicola* Lintner] in the Pacific Northwest. 12 p., illus. 1918.
944. Kelly, E.O.G., and Wilson, F.S. Controlling the garden webworm [*Loxostege similalis* Guen.] in alfalfa fields. 7 p., illus. 1918.
950. Luginbill, Philip. Southern corn rootworm [*Diabrotica duodecimpunctata* Fab.] and farm practices to control it. 12 p., illus. 1918. Rev. 1922, 10 p., illus.
957. Salmon, D.E. Important poultry diseases. Rev., with additions by Bernard A. Gallagher, 1918, 48 p., illus. [Contrib. from Bur. Anim. Indus.] (Supersedes F.B. 530.)
p. 40-44. Lice and mites.
p. 44-46. Ticks.
p. 46. Fleas.
959. White, W.H. Spotted garden slug [*Limax maximus* L.]. 8 p., illus. 1918.
961. Sechrist, E.L. Transferring bees to modern hives. 15 p., illus. 1913.
962. Tracy, S.M., and Coe, H.S. Velvet beans. 37 p., illus. 1918. [Contrib. from Bur. Plant Indus.]
p. 37. Insects.
971. Creel, G.W., and Rockwood, L.P. Control of the clover-flower midge [*Dasyneura leguminicola* Lintner]. 12 p., illus. 1918.
975. Phillips, E.F. The control of European fowlbrood. 16 p., illus. 1913.
980. Ires, Marion. The spinose ear tick [*Ornithodoros megnini* Duges] and methods of treating infested animals. 8 p., illus. 1918. [Contrib. from Bur. Anim. Indus.]
982. Hill, C.C. Control of the green clover worm [*Plathypena scabra* Fab.] in alfalfa fields. 7 p., illus. 1918.
983. Back, E.A., and Duckett, A.B. Bean and pea weevils. 24 p., illus. 1918.
994. Wallace, Errett, and Evans, L.H. Commercial Bordeaux mixtures: How to calculate their values. 11 p., illus. 1918. [Contrib. from Bur. Plant Indus. in coop. with Insect. and Fungicide Bd.] Rev. 1925, 9 p., illus.; 1927, 9 p., illus..

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1003. Satterthwait, A.F. How to control billbugs destructive to cereal and forage crops. 23 p., illus. 1919.
1006. Phillips, W.J. The wheat jointworm [(Isosoma) Harmolita tritici Fitch] and its control. 14 p., illus. 1918.
1007. Chittenden, F.H. Control of the onion thrips [Thrips tabaci Lindeman]. 16 p., illus. 1919. Rev. 1920, 16 p., illus.
1011. Yothers, W.W. The woolly white fly [Aleurothrixus howardi Quaint.] in Florida citrus groves. 14 p., illus. 1919.
1012. Phillips, E.F., and Demuth, G.S. The preparation of bees for outdoor wintering. 24 p., illus. 1918.
1014. Phillips, E.F., and Demuth, G.S. Wintering bees in cellars. 24 p., illus. 1918. Reprint with changes, 1925, 22 p., illus.
1017. Imes, Marion. Cattle scab and methods of control and eradication. 29 p., illus. 1918. [Contrib. from Bur. Anim. Indus.] Rev. 1924, 30 p., illus.; 1937, 30 p., illus.
1020. Chittenden, F.H. The sweet-potato weevil [Cylas formicarius Fab.] and its control. 24 p., illus. 1919.
1024. Darrow, G.M. Currants and gooseberries. 40 p., illus. 1919. [Contrib. from Bur. Plant Indus.] Rev. 1922, 38 p., illus. (Superseded by F.B. 1398.)
p. 18-20. Quaintance, A.L. Injurious insects. [Contrib. from Bur. Ent.]
1025. Ainslie, G.G. The larger corn stalk-borer. [Diatraea zeacolella Dyar]. 12 p., illus. 1919. (Supersedes F.B. 634.)
1026. Darrow, G.M. Strawberry culture: South Atlantic and Gulf Coast region. 40 p., illus. 1919. [Contrib. from Bur. Plant Indus.] Rev. 1925, 40 p., illus.
p. 35-36. Insects and diseases.
1027. Darrow, G.M. Strawberry culture: Western United States. 29 p., illus. 1919. [Contrib. from Bur. Plant Indus.]
p. 25. Insects and diseases.
1029. Back, E.A. Conserving corn from weevils in the Gulf Coast States. 36 p., illus. 1919.
1031. Gould, H.P. Fig growing in the South Atlantic and Gulf States. 47 p., illus. 1919. [Contrib. from Bur. Plant Indus.] Rev. 1923, 48 p., illus.
p. 28-34. Horton, J.R. Insect pests of figs. [Contrib. from Bur. Ent.]
1037. Snyder, T.E. "White ants" as pests in the United States and methods of preventing their damage. 16 p., illus. 1919. (Supersedes F. 759. Superseded by F.B. 1472.)
1038. Chittenden, F.H. The striped cucumber beetle [Diabrotica vittata Fab.] and its control. 19 p., illus. 1919.
1039. Demuth, G.S. Commercial comb-honey production. 40 p., illus. 1919. (Supersedes F.B. 503.)
1040. Lamon, H.M., and Kinghorne, J.W. Illustrated poultry primer. 28 p., illus. 1919. [Contrib. from Bur. Anim. Indus.] Reprint with changes, 1921, 28 p., illus.; Rev. 1922, 29 p., illus.
p. 25. Lice and mites.

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1043. Darrow, G.M. Strawberry varieties in the United States. 36 p., illus. 1919. [Contrib. from Bur. Plant Indus.] Rev. 1922, 36 p., illus.
p. 21-22. Insect enemies.
1046. Caffrey, D.J. The European corn borer [*Pyrausta nubilalis* Hübner] a menace to the country's corn crop. 28 p., illus. 1919.
1056. Fisher, D.F., and Newcomer, E.J. Controlling important fungous and insect enemies of the pear in the humid sections of the Pacific Northwest. 34 p., illus. 1919. [Contrib. from Bur. Ent. in coop. with Bur. Plant Indus.]
1057. Ellenberger, W.P., and Chapin, R.M. Cattle-fever ticks and methods of eradication [*Margaropus annulatus* Say]. 32 p., illus. 1919. [Contrib. from Bur. Anim. Indus.] Rev. 1920, 32 p., illus.; 1926, 21 p., illus.
1061. Chittenden, F.H. Harlequin cabbage bug [*Murgantia histrionica* Hahn] and its control. 16 p., illus. 1920.
1065. Brooks, F.E. The flat-headed apple-tree borer [*Chrysobothris femorata* Fab.]. 15 p., illus. 1919.
1070. Bishopp, F.C. The fowl tick [*Argas miniatus* Koch] and how premises may be freed from it. 16 p., illus. 1919. Rev. 1921, 16 p., illus.; 1923, 16 p., illus.
1074. Chittenden, F.H. The bean ladybird [*Epilachna corrupta* Muls.] and its control. 7 p., illus. 1919.
1076. Burke, H.E., and Herbert, F.B. California oak worm [*Phryganidia californica* Pack.]. 14 p., illus. 1920.
1083. Walton, W.R. The Hessian fly [*Phytophaga destructor* Say] and how to prevent losses from it. 16 p., illus. 1920. Rev. 1921, 16 p., illus.
1084. Phillips, E.T. Control of American fowlbrood. 15 p., illus. 1920.
1085. Imes, Marion. Hog lice and hog mange, methods of control and eradication. 28 p., illus. 1920. [Contrib. from Bur. Anim. Indus.] Rev. 1922, 28 p., illus.; 1923, 28 p., illus.; 1924, 22 p., illus.
1086. Webb, J.L. How insects affect the rice crop. 11 p., illus. 1920. Rev. 1924, 10 p., illus.
1094. Wildermuth, V.L. The alfalfa caterpillar [*Eurymus eurytheme* Boisd.] 16 p., illus. 1920.
1097. Bishopp, F.C. The stable fly [*Stomoxys calcitrans* L.]: How to prevent its annoyance and its losses to live stock. 33 p., illus. 1920. Rev. 1926, 18 p., illus. (Supersedes F.B. 540.)
1098. Johnson, Elmer, and Coad, B.R. Dusting machinery for cotton boll weevil [*Anthonomus grandis* Boh.] control. 31 p., illus. 1920.
1101. Barber, E.R. The Argentine ant [*Iridomyrmex humilis* Mayr] as a household pest. 11 p., illus. 1920. Rev. 1924, 6 p., illus.; 1925, 6 p., illus.

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1102. Kalmbach, E.R. The crow in its relation to agriculture. 20 p., illus. 1920. [Contrib. from Bur. Biol. Survey.] p. 7-10. Insects.
1104. Back, E.A. Book-lice or psocids. 4 p., illus. 1920.
1110. Kinghorne, J.W., and Green, D.M. Lice, mites and cleanliness. 10 p., illus. 1920. [Contrib. from Bur. Anim. Indus.]
1126. Vinall, H.N. Sudan grass. 30 p., illus. 1920. [Contrib. from Bur. Plant Indus. in coop. with Bur. Ent.] Rev. 1922, 27 p., illus.; 1925, 21 p., illus. p. 26-27. Insect enemies of Sudan grass.
1128. Quaintance, A.L., and Baker, A.C. Control of aphids injurious to orchard fruits, currant, gooseberry, and grape. 48 p., illus. 1920. Rev. 1926, 34 p., illus.
1140. Urbahns, T.D. Grasshopper control in the Pacific States. 16 p., illus. 1920. Rev. 1923, 16 p. illus.
1148. Morse, W.J. Cowpeas: Culture and varieties. 26 p., illus. 1920. [Contrib. from Bur. Plant Indus. in coop. with Bur. Ent.] p. 23-25. Back, E.A. Insect enemies of the cowpea.
1150. Hall, M.C. Parasites and parasitic diseases of sheep. 53 p., illus. 1920. [Contrib. from Bur. Anim. Indus.] Rev. 1921, 53 p., illus.
1154. Hofer, George. The aspen borer [*Saperda calcarata* Say] and how to control it. 11 p., illus. 1920.
1156. Back, E.A. Angoumois grain moth [*Sitotroga cerealella* Oliv.] 20 p., illus. 1920. Rev. 1922, 20 p., illus.
1169. Kotinsky, Jacob. Insects injurious to deciduous shade trees and their control. 100 p., illus. 1921.
1185. Reeves, G.I., et al. Spraying for the alfalfa weevil [*Phytonomus posivus* Gyll.]. 20 p., illus. 1920.
1188. Hopkins, A.D. The southern pine beetle [*Dendroctonus frontalis* Zimm.]. 15 p., illus. 1921.
1190. Stuart, William. How to grow an acre of potatoes. 28 p., illus. 1921. [Contrib. from Bur. Plant Indus.] Rev. 1924, 22 p., illus. p. 21-23. Insects and eelworm pests.
1193. Chittenden, F.H. The beet leaf-beetle [*Monoxia puncticollis* Say] and its control. 8 p., illus. 1921.
1197. Craighead, F.C., and Hofer, George. Protection of mesquite cordwood and posts from borers. 12 p., illus. 1921.
1198. Demuth, G.S. Swarm control. 47 p., illus. 1921. Reprint with changes, 1927. 30 p., illus.
1206. Luginbill, Philip, and Beyer, A.E. Corn earworm [*Heliothis obsoleta* Fab.] as an enemy of vetch. 19 p., illus. 1921.
1215. Phillips, E.F., and Demuth, George S. Beekeeping in the clover region. 27 p., illus. 1922. Rev. 1922, 27 p., illus.

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1216. Phillips, E.F., and Demuth, George, S. Beekeeping in the buck-wheat region. 26 p., illus. 1922.
1217. Walton, W.R. The green-bug or spring grain-aphis [*Toxoptera graminum* Rond.]: How to prevent its periodical outbreaks. 11 p., illus. 1921. Reprint with changes, 1924, 6 p., illus.
1220. Quaintance, A.L., and Shear, C.L. Insect and fungous enemies of the grape. 75 p., illus. 1921. [Contrib. from Bur. Ent. in coop. with Bur. Plant Indus.] Rev. 1926, 54 p., illus.
1222. Phillips, E.F., and Demuth, George S. Beekeeping in the tulip-tree region. 25 p., illus. 1922.
1223. Horton, J.R., and Satterthwait, A.F. The chinch bug [*Blissus leucopterus* Say] and its control. 35 p., illus. 1922.
1225. Dudley, J.E. The potato leafhopper [*Empoasca mali* LeB.] and its control. 16 p., illus. 1921. (Superseded by F.B. 1462.)
1246. Quaintance, A.L. The peach borer: How to prevent or lessen its ravages. [*Aegeria exitiosa* Say]. The para-dichlorobenzene treatment. 14 p., illus. 1921.
1249. Kinman, C.F. Olive growing in the Southwestern United States. 43 p., illus. 1922. [Contrib. from Bur. Plant Indus.] Rev. 1923, 44 p., illus. p. 39-43. Insects and diseases.
1252. Middleton, William. Sawflies injurious to rose foliage. 14 p., illus. 1922.
1257. Moznette, G.F. Insects injurious to the mango in Florida and how to combat them. 22 p., illus. 1922.
1258. Ainslie, G.G. Webworms injurious to cereal and forage crops and their control. 16 p., illus. 1922.
1259. Middleton, William. A sawfly [*Neodiprion lecontei* Fitch] injurious to young pines. 11 p., illus. 1922.
1260. Back, E.A., and Cotton, R.T. Stored-grain pests. 47 p., illus. 1922. Rev. 1922, 47 p., illus.; 1925, 48 p., illus.; 1927, 48 p., illus.
1261. Moznette, G.F. The avocado: Its insect enemies and how to combat them. 32 p., illus. 1922.
1262. Hunter, W.D., and Coad, B.R. The boll-weevil [*Anthonomus grandis* Boh.] problem. 31 p., illus. 1922.
1270. Quaintance, A.L., and Siegler, F.E. The more important apple insects. 95 p., illus. 1922.
1275. Back, E.A. Weevils in beans and peas. 35 p., illus. 1922. Rev. 1925, 36 p., illus.
1282. Campbell, Roy E. Nicotine dust for control of truck-crop insects. 24 p., illus. 1922.
1283. Oakley, R.A., and Westover, H.L. How to grow alfalfa. 36 p., illus. 1922. [Contrib. from Bur. Plant Indus.] Rev. 1926, 30 p., illus. p. 33-35. Insects.
1285. Siegler, E.H., and Daniels, A.M. Lime-sulphur concentrate: Preparation, uses, and designs for plants. 42 p., illus. 1922. [Contrib. from Bur. Ent. in coop. with Bur. Pub. Roads.]

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1286. Chittenden, F.H. The red-necked raspberry cane-borer [*Agrilus ruficollis* Fab.]. 5 p., illus. 1922.
1294. Caffrey, D.J., and Worthley, L.H. The European corn borer [*Pyrausta nubilalis* Hübn.] and its control. 45 p., illus. 1922.
1306. Weigel, C.A. Insect enemies of chrysanthemums. 36 p., illus. 1923.
1309. Borden, Arthur D. Control of the common mealybug [*Pseudococcus citri* Risso] on citrus in California. 10 p., illus. 1923. (Supersedes F.B. 862.)
1310. Phillips, W.J., and King, K.M. The corn earworm [*Heliothis obsoleta* Fab.]: Its ravages on field corn and suggestions for control. 18 p., illus. 1923.
1319. Johnson, Elmer, Howard, S.T., and Coad, B.R. Cotton dusting machinery. 20 p., illus. 1923. [Contrib. from Bur. Ent. in coop. with Bur. Pub. Roads.] (Supersedes F.B. 1098.)
1320. Beattie, J.H. The production of cucumbers in greenhouses. 30 p., illus. 1923.
p. 23-25. Enemies of greenhouse cucumbers.
1321. Woglum, R.S. Fumigation of citrus trees for control of insect pests. 59 p., illus. 1923. (Supersedes F.B. 923.)
1322. Chittenden, F.H. The striped cucumber beetle [*Diabrotica vittata* Fab.] and how to control it. 16 p., illus. 1923.
1323. Phillips, W.J., and Poos, F.W. The wheat strawworm [*Harmolita grandis* Riley] and its control. 10 p., illus. 1923.
1326. Newcomer, E.J., Yothers, M.A., and Whitcomb, W.D. Control of the codling moth [*Carpocapsa pomonella* L.] in the Pacific Northwest. 27 p., illus. 1924. [Contrib. from Bur. Ent. in coop. with Bur. Plant Indus.]
1329. Hunter, W.D., and Coad, B.R. The boll-weevil [*Anthonomus grandis* Boh.] problem. 30 p., illus. 1923. (Supersedes F.B. 1260.)
1330. Hall, Maurice C. Parasites and parasitic diseases of sheep. 53 p., illus. 1923. [Contrib. from Bur. Anim. Indus.] Rev. 1925, 36 p., illus.; 1927, 36 p., illus.; 1928., 36 p., illus.
p. 5-16. External parasites.
1331. Slocum, R.R. Back-yard poultry keeping. 22 p., illus. 1923, [Contrib. from Bur. Anim. Indus.] Reprint with changes, 1924, 22 p., illus. (Rev. of and supersedes F.B. 889.)
p. 16-17. Lice and mites.
1335. Burgess, A.F. Controlling the gipsy moth [*Porthetria dispar* L.] and brown-tail moth [*Euproctis chrysorrhoea* L.]. 28 p., illus. 1923. (Supersedes F.B. 845.)
1337. Gallagher, B.A. Diseases of poultry. 41 p., illus. 1923. [Contrib. from Bur. Anim. Indus.] Rev. reprint, 1927, 30 p., illus.
p. 34-40. Insects.

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1338. Beattie, W.R. Tomatoes as a truck crop. 34 p., illus. 1923.
[Contrib. from Bur. Plant Indus.]
p. 22-27. Insects and diseases.
1339. Pieters, A.J. Red clover culture. 33 p., illus. 1923. [Contrib.
from Bur. Plant Indus.]
p. 24-28, Walton, W.R. Insect enemies of red clover.
1344. Weigel, C.A., and Doucette, C.F. The strawberry rootworm [*Paria
canella* Fab.] as an enemy of the greenhouse rose. 14 p., illus.
1923.
1346. Back, E.A. Carpet beetles and their control. 14 p., illus. 1923.
1349. Chittenden, F.H., and Orton, W.A. Increasing the potato crop by
spraying. 22 p., illus. 1923. (Supersedes F.B. 868.)
1352. Chamberlin, F.S., and Tenhet, J.N. The tobacco flea-beetle [*Epitrix
parvula* Fab.] in the southern cigar-wrapper district. 10 p.,
illus. 1923.
1353. Back, E.A. Clothes moths and their control. 29 p., illus. 1923.
1354. Howard, L.O. The yellow-fever mosquito [*Aedes aegypti* L.]. 14 p.,
illus. 1923. Rev. 1927, 14 p., illus. (Supersedes F.B. 547.)
1356. Morgan, A.C. Tobacco hornworm insecticide [*Protoparce sexta* Joh.
and *P. quinquemaculata* Haw.]: Recommendations for use of pow-
dered arsenate of lead in dark-tobacco district. 8 p., illus.
1923. (Supersedes F.B. 867.)
1362. Weigel, C.A., and Sasser, E.R. Insects injurious to ornamental
green-house plants. 81 p., illus. 1923.
1364. Gill, J.B. Important pecan insects and their control. 49 p.,
illus. 1924. (Supersedes F.B. 843.)
1371. Gilbert, W.W., and Popenoe, C.H. Diseases and insects of garden
vegetables. 46 p., illus. 1924. [Contrib. from Bur. Plant
Indus. in coop. with Bur. Ent.] Rev. 1927, 46 p., illus.
1396. Young, R.A. The dasheen; A southern root crop for home use and
market. 35 p., illus. 1924. [Contrib. from Bur. Plant Indus.]
p. 24. Insect enemies.
1398. Darrow, G.M., and Detwiler, S.B. Currants and gooseberries: Their
culture and relation to white-pine blister rust. 38 p., illus.
1924. [Contrib. from Bur. Plant Indus.] (Supersedes F.B. 1024.)
p. 13-16. Insects.
p. 23-24. Spray schedule.
p. 36-38. Quarantine regulations.
1406. Morrison, B.Y. Garden irises. 46 p., illus. 1926. [Contrib.
from Bur. Plant Indus.]
p. 43-46. Diseases and insect pests. [Section on insect pests
approved by C.A. Weigel, Bur. Ent.]
1407. Howard, N.F. The Mexican bean beetle [*Epilachna corrupta* Muls.]
in the East. 14 p., illus. 1924.

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1408. Howard, E.O., and Bishopp, F.C. The house fly [*Musca domestica* L.] and how to suppress it. 16 p., illus. 1924. Rev. 1926, 17 p. illus.; 1926, 17 p., illus. (Supersedes F.B. 851.)
1414. Johnson, A.G., et al. The rosette disease of wheat and its control. 10 p., illus. 1924. [Contrib. from Bur. Plant Indus.] p. 6-7. Symptoms of rosette compared with insect injuries.
1418. Beattie, J.H. Lettuce growing in greenhouses. 22 p., illus. 1924. [Contrib. from Bur. Plant Indus.] p. 20-22. White, W. H. Insects injurious to greenhouse lettuce. [Contrib. from Bur. Ent.]
1425. Morgan, A.C., and Gilmore, J.U. The tobacco flea-beetle [*Epitrix parvula* Fab.] in the dark fire-cured tobacco district of Kentucky and Tennessee. 12 p., illus. 1924.
1431. Beattie, J.H. Greenhouse tomatoes. 24 p., illus. 1924. [Contrib. from Bur. Plant Indus.] p. 19-21. White, W.H. Insect enemies. [Contrib. from Bur. Ent.]
1461. Chittenden, F.H. The common cabbage worm [*Pieris rapae* L.] and its control. 14 p., illus. 1926. (Supersedes F.B. 766.)
1462. Dudley, J.E., Jr. The potato leafhopper [*Empoasca mali* LeB.] and how to control it. 13 p., illus. 1926. (Supersedes F.B. 1225.)
1468. Beattie, W.R. Muskmelons. 38 p., illus. 1926. [Contrib. from Bur. Plant Indus.] p. 22-24. White, W.H. Insect enemies. [Contrib. from Bur. Ent.]
1472. Snyder, T.E. Preventing damage by termites or white ants. 22 p., illus. 1926. (Supersedes F.B. 1037.)
1477. Snyder, T.E. Preventing damage by *Lyctus* powder-post beetles. 13 p., illus. 1926. (Supersedes F.B. 778.)
1483. Back, E.A., and Cotton, R.T. Control of insect pests in stored grain. 30 p., illus. 1926.
1484. Larrimer, W.H. The clover leaf weevil [*Hypera punctata* Fab.] and its control. 6 p., illus. 1926.
1489. McKinney, K.B., and Milan, Joe. The green June beetle [*Cotinis nitida* L.] larva in tobacco plant beds. 5 p., illus. 1926.
1493. Imes, Marion. Lice, mange, and ticks of horses, and methods of control and eradication. 22 p., illus. 1926. [Contrib. from Bur. Anim. Indus.]
1494. Crumb, S.E. Tobacco cutworms and their control. 14 p., illus. 1926.
1495. Weigel, C.A., and Middleton, William. Insect enemies of the flower garden. 54 p., illus. 1926. Rev. 1927, 54 p., illus.
1498. Flint, W.P., and Larrimer, W.H. The chinch bug [*Blissus leucop-
terus* Say] and how to fight it. 17 p., illus. 1926.
1499. Chittenden, F.H., and White, W.H. The melon aphid [*Aphis gossypii* Glov.] and its control. 17 p., illus. 1926. (Supersedes F.B. 914.)
1503. Bishopp, F.C., and Dove, W.E. The horse bots [*Gastrophilus* spp.] and their control. 14 p., illus. 1926.

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1528. Reeves, George I. The control of the alfalfa weevil [*Phytonomus posticus* Gyll.]. 22 p., illus. 1927. (Supersedes F.B. 741 and 1185.)
1531. Morgan, A.C. The tobacco budworm [*Heliothis virescens* Fab.] and its control in the Georgia and Florida tobacco-growing region. 9 p., illus. 1927. (Supersedes FB 819.)
1548. Caffrey, D.J., and Worthley, L.H. The European corn borer [*Pyrausta nubilalis* Hübn.]: Its present status and methods of control. 48 p., illus. 1927.

Journal of Agricultural Research

The Journal of Agricultural Research was established in October, 1913. It is a semimonthly publication containing articles on technical agricultural research carried on by the United States Department of Agriculture or the State experiment stations. The contributors are members of the scientific staff of the department and scientific workers of the State agricultural experiment stations. These separates bear distinctive symbols to indicate the bureau or station from which they originate; e.g., all separates from the Bureau of Entomology belong to the "K" series.

- v. 1, no. 1, Webster, F.M., and Parks, T.H. The serpentine leaf-
p. 59-88. miner [*Agromyza pusilla* Meig.]. illus. 1913. (K-1)
- v. 1, no. 2, Pierce, W.D. The occurrence of a cotton boll weevil
p. 89-96. [*Anthonomus grandis turberiae* Pierce] in Arizona.
illus. 1913. (K-2)
- v. 1, no. 3, Cushman, R.A. The *Calliephialtes* parasite [*Calliephi-*
p. 211-237. *altes messor* Grav. (*Ephialtes carbonarius* Christ.)].
illus. 1913. (K-3)
- v. 1, no. 4, Pierce, W.D. New potato weevils [*Premnotrypes solani* n.sp.
p. 347-351. and *Trypopremnon latithorax* n. sp.] from Andean South
America. illus. 1914. (K-4)
- v. 1, no. 5, Ballard, W.S., and Volck, W.H. Winter spraying with
p. 437-444. solutions of nitrate of soda. illus. 1914. (G-14)
- v. 1, no. 6, Greene, C.T. The cambium miner [*Agromyza pruinosa*
p. 471-474. Coq.] in river birch. illus. 1914. (K-5)

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- v. 2, no. 1, Phillips, W.J. Corn-leaf blotch miner [*Agromyza par-*
p. 15-31. *vicornis* Loew]. illus. 1914. (K-6)
- v. 2, no. 2, Scott, E.W., and Paine, J.H. Lesser bud-moth [*Recurva-*
p. 161-162. *ria nanella* Hübner]. 1914. (K-7)
- v. 2, no. 3, Coad, E.R. Feeding habits of the boll weevil [*Anthono-*
p. 235-245. *mus grandis* Boh.] on plants other than cotton. 1914.
(K-8)
- v. 2, no. 6, Kelly, E.O.G. A new sarcophagid parasite of grass-
p. 435-445. hoppers [*Sarcophaga kellyi* Aldrich]. illus. 1914.
(K-9)
- v. 2, no. 6, Khab, Frederick, and Yothers, W.W. Papaya fruit fly
[*Toxotrypana curvicauda* Gerstaecker]. illus. 1914.
(K-10)
- v. 3, no. 2, Brooks, F.E. Apple root borer [*Agrilus vittaticollis*
p. 179-185. Rand.]. illus. 1914. (K-11)
- v. 3, no. 3, Back, E. A., and Pemberton, C.E. Life history of the
p. 269-274. melon fly [*Bactrocera cucurbitae* Coq.]. 1914. (K-12)
- v. 3, no. 4, Chapman, R.N. Observations on the life history of
p. 283-293. *Agrilus bilineatus* Weber. 1915. (Minn.-2)
- v. 3, no. 4, Back, E.A., and Pemberton, C.R. Susceptibility of
p. 311-340. citrus fruits to the attack of the Mediterranean
fruit fly [*Ceratitis capitata* Wied.]. illus.
1915. (K-13)
- v. 3, no. 4, Wildermuth, V.L. Three-cornered alfalfa hopper [*Stic-*
p. 343-362. *tocephala festina* Say]. illus. 1915. (K-14)
- v. 3, no. 5, Back, E.A., and Pemberton, C.E. Life history of the
p. 363-374. Mediterranean fruit fly [*Ceratitis capitata* Wied.]
from the standpoint of parasite introduction.
illus. 1915. (K-15)
- v. 3, no. 5, Patch, E.A. Two clover aphids [*Aphis brevis* Sander-
p. 431-433. son and *Aphis bakeri* Cowen]. illus. 1915. (Me.-3)
- v. 4, no. 2, Glaser, R.W. Wilt of gipsy-moth caterpillars [*Por-*
p. 101-128. *thetria dispar* L.]. illus. 1915. (K-16)

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- v. 4, no. 3, Kelly, E.O.G. A new wheat thrips [*Prosopothrips cognatus* Hood]. illus. 1915. (K-17)
p. 219-223.
- v. 4, no. 3, Parker, J.R. Influence of soil moisture upon the rate of increase in sugar-beet root-louse [*Pemphigus betae* Doane] colonies. 1915. (Mont.-1)
p. 241-250.
- v. 4, no. 3, Pierce, W.D. Some sugar-cane root-boring weevils [*Diaprepes* spp.] of the West Indies. illus. 1915. (K-18)
p. 255-263.
- v. 4, no. 4, Johnston, F.A. Asparagus-beetle egg parasite [*Tetrastichus asparagi* Cwfd.], illus. 1915. (K-19)
p. 303-313.
- v. 4, no. 5, Phillips, W.J. Further studies of the embryology of *Toxoptera graminum* [Rodani]. illus. 1915. (K-20)
p. 403-404.
- v. 5, no. 6, Rand, F.V. Dissemination of bacterial wilt of cucurbits [*Diabrotica vittata* Fab. the agent]. illus. 1915. (G-64)
p. 257-260.
- v. 5, no. 12, Tower, Daniel G. Biology of *Apanteles militaris* Walsh. illus. 1915. (K-21)
p. 495-507.
- v. 5, no. 12, Parrott, P.J., and Fulton, B.B. Cherry and hawthorn sawfly leaf miner [*Profenusa collaris* Parrott]. illus. 1915. (N.Y. Geneva -4)
p. 519-528.
- v. 5, no. 15, Back, E.A., and Pemberton, C.E. Effect of cold-storage temperatures upon the Mediterranean fruit fly [*Ceratitidis capitata* Wied.]. 1916. (K-22)
p. 657-666.
- v. 5, no. 17, Back, E.A., and Pemberton, C.E. Banana as a host fruit of the Mediterranean fruit fly [*Ceratitidis capitata* Wied.]. illus. 1916. (K-23)
p. 793-804.
- v. 5, no. 19, Wolf, F.A. Insects as agents in dissemination of the leaf spot organism [In his: Further studies on peanut leafspot. p. 891-902.] 1916. (Ala.-1)
p. 897-901.
- v. 5, no. 20, Johnson, P.M., and Ballinger, A.M. Life history of the Colorado potato beetle [*Leptinotarsa decemlineata* Say]. illus. 1916. (K-24)
p. 917-926.

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- v. 5, no. 20, Herrick, G.W., and Matheson, Robert. Observations on the
p. 943-949. life history of the cherry leaf beetle [*Galerucella*
cavicornis Lec.]. illus. 1916. (N.Y.Cornell-2)
- v. 5, no. 21, Baker, A.C., and Turner, W.F. Morphology and biology of
p. 955-993. the green apple aphid [*Aphis pomi* De Geer]. illus.
1916. (K-25)
- v. 5, no. 23, Baker, A.C. Identity of *Eriosoma pyri* [Fitch]. illus.
p. 1115-1119. 1916. (K-26)
- v. 5, no. 25, Woodworth, C.W. A new spray nozzle. illus. 1916.
p. 1177-1182. (Cal.-4)
- v. 5, no. 25, Pierce, W.D. A new interpretation of the relationships
p. 1183-1191. of temperature and humidity to insect development.
illus. 1916. (K-27)
- v. 6, no. 2, Miller, J.M. Oviposition of *Megastigmus spermatophagus*
p. 65-68. Wachtl in the seed of Douglas fir. illus. 1916.
(K-28)
- v. 6, no. 3, Merrill, J.H., and Ford, A.L. Life history and habits
p. 115-127. of two new nematodes [*Diplogaster labiata* n.sp. and
D. aerivora n.sp.] parasitic on insects. illus.
1916. (Kans.-2)
- v. 6, no. 3, Coad, B.R., and Howe, R.W. Insect injury to cotton
p. 129-139. seedlings. illus. 1916. (K-29)
- v. 6, no. 5, Simanton, F. L. *Hyperaspis binotata* Say, a predatory
p. 197-203. enemy of the terrapin scale [*Eulecanium nigrofascia-*
tum Perg.]. illus. 1916. (K-30)
- v. 6, no. 7, Back, E.A., and Pemberton, C.E. Effect of cold-storage
p. 251-260. temperatures upon the pupae of the Mediterranean fruit
fly [*Ceratitis capitata* Wied.]. 1916. (K-31)
- v. 6, no. 8, Snyder, T.E. Egg and manner of oviposition of *Lyctus*
p. 273-276. *planicollis* Leconte. illus. 1916. (K-32)
- v. 6, no. 8, Haseman, L. *Ornix geminatella* Pack., the unspotted
p. 289-295. tentiform leaf miner of apple. illus. 1916.
(Mo.-2)

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- v. 6, no. 10, Baker, A.C., and Davidson, W.M. Woolly pear aphid
p. 351-360. [*Eriosoma pyricola* Baker]. illus. 1916. (K-33)
- v. 6, no. 10, Packard, C. M. Life histories and methods of rearing
p. 367-381. Hessian-fly [*Phytophaga destructor* Say] parasites.
illus. 1916. (K-34)
- v. 6, no. 11, Runner, G. A. Effects of Röntgen rays on the tobacco,
p. 383-385. or cigarette, beetle [*Lasioderma serricornis* Fab.]
and the results of experiments with a new form of
Röntgen tube. 1916. (K-35)
- v. 6, no. 11, Rand, F.V., and Enlows, M.A. Insect transmission of
p. 417-423. bacterial wilt of cucurbits [In this: Transmission
and control of bacterial wilt of cucurbits, p. 417-
434.]. 1916. (G-83)
- v. 6, no. 12, Tower, D.G. Comparative study of the amount of food
p. 455-458. eaten by parasitized and nonparasitized larvae of
Cirphis unipuncta Haworth. 1916. (K-36)
- v. 6, no. 12, Quaintance, A.L., and Baker, A.C. Aleyrodidae, or
p. 459-472. white flies, attacking the orange, with descriptions
of three new species of economic importance. illus.
1916. (K-37)
- v. 6, no. 14, Wildermuth, V.L. California green lacewing fly [Chryso-
p. 515-525. *pa californica* Coq.]. illus. 1916. (K-38)
- v. 6, no. 16, Holloway, T.E. Larval characters and distribution of
p. 621-626. two species of *Diatraea* [*Diatraea saccharalis* cram-
bidoides and *D. zeacolella*]. illus. 1916. (K-39)
- v. 6, no. 21, Davis, J.J., and Satterthwait, A.F. Life-history studies
p. 799-812. of *Cirphis unipuncta* [Haworth], the true army worm.
illus. 1916. (K-40)
- v. 6, no. 22, Cushman, R.A. *Thersilochus conotracheli* Riley, a
p. 847-855. parasite of the plum curculio [*Conotrachelus nenu-
phar* Hbst.]. illus. 1916. (K-41)
- v. 6, no. 23, Cooley, R.A. Observations on the life history of the
p. 871-881. army cutworm, *Chorizagrotis auxiliaris* Grote. 1916.
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- v. 6, no. 23,
p. 883-887. Davis, J.J. *Aphidoletes meridionalis* Felt, an important dipterous enemy of aphids. illus. 1916. (K-42)
- v. 7, no. 3,
p. 89-122. McIndoo, N.E. Effects of nicotine as an insecticide. illus. 1916. (K-43)
- v. 7, no. 4,
p. 147-153. Urbahns, T.D. Life history of *Habrocytus medicaginis* Gahan, a recently described parasite of the Chalcis fly [*Bruchophagus funebris* Howard] in alfalfa seed. illus. 1916. (K-44)
- v. 7, no. 7,
p. 321-343. Baker, A.C., and Turner, W.F. Rosy apple aphid [*Aphis malifoliae* Fitch]. illus. 1916. (K-45)
- v. 7, no. 8,
p. 373-378. Quaintance, A.L. *Laspeyresia molesta* n. sp., an important new insect enemy of peach. illus. 1916. (K-46)
- v. 7, no. 9,
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- v. 7, no. 11,
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- v. 8, no. 6,
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- v. 8, no. 7,
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- v. 8, no. 8,
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- v. 9, no. 10, Busck, August
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- v. 10, no. 1, Moore, William, and Graham, S.A. A neglected factor in
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- v. 10, no. 2, Baker, A.C., and Davidson, W.M. A further contribution
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- v. 10, no. 4, Lovett, A.L., and Robinson, R.H. Toxic values and killing
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- v. 10, no. 6, Greene, C.T. Two new cambium miners (Diptera) [*Agromyza*
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- v. 10, no. 7, Moore, William. Volatility of organic compounds as an
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- v. 12, no. 5, Pemberton, C.E., and Willard, H.F. Interrelations of fruit-fly [*Ceratitis capitata* Wied.] parasites in Hawaii. illus. 1918. (K-60)
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- v. 29, no. 4, Snyder, Thomas E. New termites and hitherto unknown
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- v. 29, no. 6, Larson, A. O., and Fisher, C.K. Longevity and fecundity
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- v. 29, no. 6, Myers, P.R. *Polyscelis modestus* Gahan, a minor para-
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- v. 29, no. 12, Chamberlin, F.S., Tenhet, J.N., and Böving, A.G. Life-
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p. 97-154. the subfamily Ortheziinae. illus. 1925. (K-144)
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p. 441-449. *besi* Weed] in Tennessee. illus. 1925. (Tenn-3)
- v. 30, no. 5, Cook, W.O. The distribution of the alfalfa weevil
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- v. 30, no. 7, Crossman, S.S. Two imported egg parasites of the gipsy
p. 643-675. moth [*Porthetria dispar* L.], *Anastatus bifasciatus* Fonsc.
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- v. 30, no. 8, Ellis, William O. Some lepidopterous larvae resembling
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- v. 31, no. 12, Barber, T.C. Preliminary observations on an insect group new to the United States. [*Dysdercus obscuratus* Distant] of the cotton stainer. illus. 1925. (K-154)
p. 1137-1147.
- v. 32, no. 1, Campbell, F.L. On the role of calcium hydroxide in hydrated lime-acid lead arsenate sprays. 1926. (N.J.-16)
p. 77-82.

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controlling it. 1926. (K-161)
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- v. 32, no. 11, Larrimer, W.H., and Cartwright, W.B. Determination of
p. 1041-1044. the percentage of infestation by the Hessian fly,
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p. 1053-1068. of the European corn borer [*Pyrausta nubilalis*
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- v. 33, no. 1, Willard, H.F., and Bissell, T. L. Work and parasitism
p. 9-15. of the Mediterranean fruit fly [*Ceratitidis capitata*
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- v. 33, no. 1, Fleming, Walter E. A homogeneous carbon-disulphide
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- v. 33, no. 1, Chamberlin, F.S. *Cardiochiles nigriceps* Vier., an
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- v. 33, no. 1, Smith, R.C., and Davis, E.W. The pea aphid [*Illinoia*
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- v. 33, no. 4, Evenden, J.C. The pine butterfly, *Neophasia menapia*
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- v. 33, no. 8, Morrison, Harold. An apparently new sugar-cane mealy-bug [*Ripersia radiculicola* Morrison]. illus. 1926. (K-177)
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p. 335-338.

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- v. 34, no. 5, p. 449-451. Carter, Walter. A technic for use with homopterous vectors of plant disease, with special reference to the sugar-beet leafhopper, *Eutettix tenellus* (Baker). illus. 1927. (K-167)
- v. 34, no. 5, p. 453-458. Cushman, R.A. New species and forms of Ichneumonidae parasitic upon the gipsy-moth parasite *Apanteles melanoscelus* (Ratzeburg). 1927. (K-181)
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- v. 34, no. 7, p. 597-613. Miller, J.M., and Patterson, J. E. Preliminary studies on the relation of fire damage to bark-beetle [*Dendroctonus brevicornis* (Cock.)] attack in western yellow pine. illus. 1927. (K-184)
- v. 34, no. 7, p. 615-622. Cushman, R.A. The parasites of the pine tip moth, *Rhyacionia frustrana* (Comstock). illus. 1927. (K-189)
- v. 34, no. 8, p. 727-738. Griffin, E.L., Richardson, C.H., and Burdette, R.C. Relation of size of oil drops to toxicity of petroleum oil emulsions to aphids. 1927. (E-36)
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- v. 34, no. 11, Van Leeuwen, E.R. A study of the toxicity of acid lead
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- v. 35, no. 4, Van Der Meulen, P.A., and Van Leeuwen, E. R. A study of
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- v. 35, no. 4, Frost, S.W. Notes on the life history of the bud moth,
p. 347-359. *Spilonota ocellana* D. & S. illus. 1927. (Pa.-24)
- v. 35, no. 5, Phillips, E.F. The utilization of carbohydrates by
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(K-194)
- v. 35, no. 12, Plakidas, A. G. Strawberry xanthosis (yellows), a new
p.1057-1090. insect-borne disease. illus. 1927.
[Due to the red spider, *Tetranychus telarius* L.].
(Cal.-49)

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12. Ingram, J.W. The striped blister beetle [*Epicauta lemniscata* Fab.]
on soy beans. 5 p. 1927.

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Miscellaneous Circulars
(Succeeded by Miscellaneous Publications)

This series was discontinued with no. 3 in 1897 and resumed in 1923 with no. 3 (The relation of agricultural education to farm organizations, by L. W. Pugsley).

27. Motion pictures of the Department of Agriculture. A list of films and how to obtain them. 32 p. 1924.
----Supplement. New motion pictures released by the U. S. Department of Agriculture. 4 p. 1925.
----New motion pictures. Additions to Miscellaneous Circular 27. 6 p. 1926.
43. Lessons on cotton for elementary schools. 27 p., illus. 1925. p. 24-27. [Insects that attack cotton.]
46. Wade, J. S. A bibliography of the European corn borer [*Pyrausta nubilalis* Hbn.]. 20 p. 1925.
70. Worthley, L. H., and Caffrey, D. J. Timely information about the European corn borer [*Pyrausta nubilalis* Hbn.]. 7 p., illus. 1926.
80. Directory of field activities of the Bureau of Entomology. 25 p., map. 1926.
84. Caffrey, D. J., and Worthley, L. H. How to fight the European corn borer [*Pyrausta nubilalis* Hbn.] this fall. 4 p., illus. 1926.
86. Motion pictures of the U. S. Department of Agriculture, 1926. 31 p. 1926.
102. Pertinent information regarding the 1927 spring clean-up of areas quarantined on account of the European corn borer [*Pyrausta nubilalis* Hb.] 7 p. 1927.
104. Worthley, L. H., and Caffrey, D. J. Spread and infestation by the European corn borer [*Pyrausta nubilalis* Hbn.] during 1926. 12 p., illus. 1927.
106. Evans, J. A. Emergency crops for flooded lands in the Mississippi Valley. 8 p. 1927. [Contrib. from Bur. Plant Indus. in coop. with Bur. Ent.].

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(Succeeding Miscellaneous Circulars)

2. Story of the cattle fever tick. What every southern child should know about cattle ticks. 19 p., illus. 1927.
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9. Hunt, Mabel. List of publications of the United States Department of Agriculture from January, 1901, to December, 1925, inclusive. 182 p. 1927.
p. 97-103. Bureau of Entomology.

2. Proceedings of a convention of agriculturists held at the Department of Agriculture January 23, 24, 25, 26, 27, and 29 (second convention). 245 p. 1883.
p. 40-42. Entomology [In: The true relation of science to industry.]
8. Branner, J. C. Cotton in the empire of Brazil. 79 p. 1885.
p. 53-59. [Mentions the cotton caterpillar as doing much damage.]
9. Proceedings of a convention of delegates from agricultural colleges and experiment stations held at the Department of Agriculture July 8 and 9, 1885. 196 p.
p. 188. Silk-culture.

v. 1-14 May, 1863, -December, 1876 (No more published)

1865. The potato bug - the chinch bug [by George R. Lawton] -
The cutworm, Apr-May, p. 21-22.
King, E. P. The potato bug, Aug., p. 27.
Glover, Townend. Correspondence of the entomologist. Letter
No. 1, Oct., p. 6-9; No. 2, Oct., p. 10; No. 3, Nov., p. 6-11.

1866. Insects injurious to the cotton plant. [1], June, p. 239-241, illus.;
2, July, p. 282-285, illus.; 3, Sept., p. 331-335, illus.; 4,
Oct., p. 377-378, illus.; 5, Nov-Dec., p. 421-424, illus.

1867. Insects injurious to the cotton plant. 6. The red bug or cotton
stainer [*Dysdercus cuturellus* H. Schf.]. Jan., p. 21-23.
Destruction of insects infesting cereals, Apr., p. 158.
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Locusts [*Tibicina septendecim* L.] The cotton and boll worm, May-
June, p. 214.
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Grasshoppers, May-June, p. 244-245.
Morse, C. E. The cotton caterpillar, May-June, p. 249-250.
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Prevost, L. Silk culture in California, Aug.-Sept., p. 285-286.
Ferguson, J. M. The cotton worm [*Alabama argillacea*] Aug.-Sept.,
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Goble, W. F. Grasshoppers, Aug.-Sept., p. 290-291.
[Glover, Townend]. Entomological, Oct., p. 329-330

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Grasshoppers, May-June, p. 243-245.
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Encouragement of silk culture, May-June, p. 287.
Grasshoppers in Nebraska, Aug. -Sept., p. 356.
Reynolds, Edwin. Experiments with the potato bug, Aug.-Sept., p. 361.
Rathvon, S.V. Insects injurious to the grape, Nov.-Dec., p. 452-456.
Snyder, S. J. H. Locusts and grasshoppers in Kansas, Nov.-Dec., p. 456.
1869. Insects - English sparrows, Mar-Apr., p. 127.
Driscoll, B. O. The western grasshopper, Mar.-Apr., p. 145.
Bee statistics of the grand duchy of Hesse, Mar.-Apr., p. 154.
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How to kill the curculio, May-June, p. 229.
The potato bug, July, p. 274.
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1871. Glut of Japanese silk-worm eggs, Mar. -Apr., p. 154.
Destruction of grain by insects [*Calandra oryzae* L.], Mar.-Apr.,
p. 212.
Colorado potato beetle, July, p. 332.
Glover, Townend. Entomological record, July, p. 332-336; Oct.,
p. 403-405; Nov.-Dec., p. 477-480.
1872. Glover, Townend. Entomological record, Jan., p. 22-24; Feb.,
p. 74-76; Mar.-Apr., p. 137; May-June, p. 215-218; July,
p. 304-307; Aug.-Sept., p. 366-371; Oct., p. 438-440; Nov.-
Dec., p. 497-500.
1873. Glover, Townend. Entomological record, Jan., p. 29-30; Mar., p.
164-166; May-June, p. 237-239; July, p. 345-351; Aug.-Sept.,
p. 426-431; Oct., p. 496-499; Nov.-Dec., p. 571-579.
Destruction of destructive insects, May-June, p. 285.
[Cotton pests], Aug.-Sept., p. 400-402.
1874. Glover, Townend. Entomological record, Jan., p. 43-46; Apr-May,
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428-431; Nov.-Dec., p. 506-507.
Phylloxera in America [signed: W. S.], Jan., p. 55-56.
1875. Glover, Townend. Entomological record. Jan., p. 40-42; Feb.-Mar.,
p. 175-176; Apr., p. 221-230; July, p. 307-310; Oct., p. 442-445.
1876. Entomological division [of the Department at the Centennial], May-
June, p. 134-136.
Insect injuries, July, p. 245-246.

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Posters

The "E" series posters are all from the Bureau of Entomology and most of them were illustrated by R. E. Snodgrass.

Alfalfa seed chalcis. 1919. (E-179)

Are you feeding cattle or ticks? [Bur. Anim. Indus.]

Bean beetle. 1921. (E-209)

Beat the boll weevil. 1917. [Bur. Ent.]

Best time to sow winter wheat. Give the Hessian fly no chance. Sept., 1917.
[Bur. Ent.] [Special for the States of N.Y., N.J., N.C., Pa., W.Va.,
Okla., and Tenn.]

The brown-tail moth. Four of its imported natural enemies. [Bur. Ent.]

Cabbage worms. 1918. (E-153)

Cattle rustlers of bygone days, cattle rustlers of today, cattle fever ticks
they run off more beef than the old thieves did. Baltimore and New York,
Thompson, Ellis Company, 1919. [Bur. Anim. Indus.]

Chinch bug. 1918. (E-131)

Color standards for grades of comb honey. [Bur. Agr. Econ. in coop. with
Bur. Ent.]

Cutworms. 1915. (E-130)

Cutworms. 1918. (E-147)

Dip that tick. [Bright yellow placard.] [Bur. Anim. Indus.]

Dip that tick in March. [Bur. Anim. Indus.]

Don't let the cattle tick maverick your cattle; dip that tick. 1919.
[Bur. Anim. Indus.]

European corn borer. 1918. (E-166)

European corn borer control. 1927. [Bur. Ent.]

Garden cutworms. 1918. (E-152)

Garden plant lice. 1919. (E-157)

The gipsy moth. Four of its imported natural enemies and the wilt disease.
[Bur. Ent.]

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Posters (Cont'd.)

Grades for section comb honey. [Bur. Ent.]

Grasshoppers. March, 1918. (E-129)

Grasshoppers. May, 1918. (E-149)

Help fight the European corn borer. [Bur. Ent.]

Hessian fly. (E-177)

Honey. Its all good honey. [Bur. Agr. Econ. in coop. with Bur. Ent.]

Is the weevil getting your sweet potatoes? [Bur. Ent.]

The Japanese beetle. [Bur. Ent.]

The Japanese beetle. 1927. [Bur. Ent.]

Kill that seed tick in March. 1925. [Bur. Anim. Indus.]

Map showing areas quarantined for the gipsy-moth and the brown-tail moth.
1921. [Fed. Hort. Bd.]

Map showing spread of cotton boll weevil from 1892 to 1912. 1912.
[Bur. Ent.]

Map showing the spread of the Mexican cotton boll weevil from 1892 to 1913.
1913. [Bur. Ent.]

Map showing the spread of the Mexican cotton boll weevil from 1892 to 1914.
1914. [Bur. Ent.]

Map showing the spread of the Mexican cotton boll weevil from 1892 to 1915.
1915. [Bur. Ent.]

Oriental peach moth. By A. L. Quaintance. 1918. (E-143)

Pests and diseases of cotton. 1925. [Off. Coop. Extension Work in
coop. with Bur. Ent. and Bur. Plant Indus.]

Pests of corn. 1925. [Off. Coop. Extension Work in coop. with Bur.
Ent. and Bur. Plant Indus.]

Pests of small grain. 1925. [Off. Coop. Extension Work in coop.
with Bur. Ent.]

Potato beetles. By F. H. Chittenden. 1918. (E-144)

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Posters (Cont'd.)

- Prevent white grub injury. 1918. (E-119)
- Protect your poultry from European fowl pest. 1925. [Bur. Anim. Indus.]
- Requirements for the more important grades of honey. (Chart supplementing U. S. Dept. Agr. Circular 24, 1927) [Bur. Ent. in coop. with Bur. Agr. Econ.]
- Spray potato fields. 1919. (E-155)
- Spray schedule for apples. 1919. (E-141) [Bur. Ent. in coop. with Bur. Plant Indus. and the State agricultural colleges.]
- Spraying apples. By A. L. Quaintance. 1918. (E-142)
- Starve the Hessian fly. 1916. [Bur. Ent.]
- Stop 'em! Crop thieves! Mexican beetles are loose in Alabama. 1921. [Bur. Ent.]
- Ticks make the difference. \$87. or \$110. a head for southern steers on market. 4 p. [Bur. Anim. Indus.]
- Wheat jointworm. (E-178)

OFFICE OF THE SECRETARY

1 - 183

Circulars

1896 - 1921

(Series discontinued; 162-182 never published)

23. Agriculture in our industries. 8 p. 1907.
p. 3. Insect friends and enemies.
32. Knapp, S. A. Cotton, the greatest of cash crops. 10 p. 1910.
[Discusses boll weevil relations.]
34. Rules and regulations for carrying out the provisions of the insecticide act of 1910. Dec. 10, 1910. 14 p. Amendment 1, July 13, 1911; Amendment 2, Nov. 16, 1912; Amendment 3, June 30, 1914; 2d rev., Aug. 24, 1917.
37. The Department of Agriculture in relation to a National law to prevent the importation of insect infested or diseased plants. 11 p. 1911.
40. The present outbreak of the fall army worm [*Laphygma frugiperda* S. & A.] and recommendations for its control. 2 p., illus. 1912.
Rev. Aug. 31, 1912. 4 p.
41. Rules and regulations for carrying out the plant quarantine act. Sept. 25, 1912. 12 p. Rev. Dec. 20, 1912.

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF THE SECRETARY

Circulars (Cont'd.)

44. Rules and regulations for carrying out the plant quarantine act. May 26, 1913. 16 p.
51. Webster, F.M., and Kelly, E.O.G. The Hessian fly [*Phytophaga destructor* Say] situation in 1915. 10 p., illus. 1915.
55. Webster, F.M. The spring grain aphid or "green bug" [*Toxoptera graminum* Rond.] in the Southwest and the possibilities of an outbreak in 1916. 3 p., illus. 1916.
61. Important insects which may affect the health of man or animals engaged in military operations. 24 p., illus. 1916.
86. The agricultural situation for 1918. Part III. Sugar—more beet and cane sugar should be produced. 1918. 34 p.
p. 15-16. Insects and fungi curtail cane crop.
p. 26-27. Avoid the toll of insects and diseases.
87. The agricultural situation for 1918. Part IV. Honey, more honey needed. 8 p. 1918.
88. The agricultural situation for 1918. Part V. Cotton. Maintaining the supply of cotton. 34 p. 1918.
p. 13-17. Insect enemies of cotton.
89. The agricultural situation for 1918. Part VI. Rice. Produce more rice for consumption and export. 24 p. 1918.
p. 22. Reduce losses from insects.
90. The agricultural situation for 1918. Part VII. Wheat. More wheat is needed for home use and for the allies. 32 p. 1918.
p. 26. Principal insects of the wheat crop and steps taken to control them.
91. The agricultural situation for 1918. Part VIII. Corn. A large acreage of corn needed. 17 p. 1917.
p. 12-13. Insect enemies.
92. The agricultural situation for 1919. Part IX. Potatoes. An ample supply of potatoes needed. 39 p. 1918.
p. 30-34. Potato insects.
127. The "17-year locust" [*Tibicina septendecim* L.]. 10 p., illus. 1919. (Digested from Bulletin 71, Bureau of Entomology. The periodical cicada, by C. L. Marlatt.)
148. Graves, H.S. A policy of forestry for the nation. 11 p. 1919.
p. 7. Protection against insects and disease.

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OFFICE OF THE SECRETARY

Extension Service

With the corn borer. No. 1, March 31, 1927, - no.24, Dec. 31, 1927.
[Mimeographed material furnished by the Bureau of Entomology.]

Lantern Slide Series

167. Transferring bees to modern hives. 15 p. Jan. 1, 1925.
[Mimeographed.]

180. How insects attack garden vegetables and methods of control.
11 p. 1928. [Mimeographed.]

221. Control of mosaic diseases of cucumbers. 13 p. 1927.
[Mimeographed.]

Unnumbered publications

Entomologie pratique pour les fils de cultivateurs, maniere de recueillir
et de conserver les insectes, traduit par Louis Quaedvlieg... 25 p.,
illus. Brussels, Impr. F. Callawaert pere, 1875. (From Report of the
U. S. Dept. Agr. for 1868, p. 305-318.)

Report of the Commissioner of Agriculture on the diseases of cattle in
the United States. 205 p., illus. 1871.
p. 118-119. Tick theory of periodic fever scouted.

The U. S. Department of Agriculture correspondence. Norman J. Colman,
Commissioner of agriculture, to Hon. F. M. Cockrell, U. S. Senator.
103 p. Nov. 8, 1887.
p. 39-55. Division of entomology. [This contains reprints of the
Division of entomology Circulars, 1st series, nos. 9, 13, 14, 15,
17, 19, and 21.]

Progress of the beet sugar industry in the United States in 1898. 162 p.
1899.
p. 32. Sugar beet insects and diseases.
p. 76. Potato bug, false chinch bug (*Nysius angustii*? [*Nysius ericae*
Schill.] and true chinch bug [*Blissus leucopterus* Say].

Progress of the sugar beet industry in the United States in 1899... 200 p.,
illus. 1900 [Also published as Cong. 66, Sess. 1, H. of R. Doc. 699.]
p. 67. Webworm and fall army worm.

Report of the Committee of Bureau chiefs, A. D. Melvin, chairman. 60 p.
Jan. 19, 1911.
p. 26-27. The Bureau of Entomology.

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Office of the Secretary

Unnumbered publications (Cont'd.)

Are you feeding cattle or ticks? 4 p., illus. 1915.

Program of work for 1915, 1916, 1917 and 1919. [Under the Bureau of Entomology the various projects relating to entomology are described.]

Quarantine on stone and quarry products on account of the gypsy moth [*Porthetria dispar* L.], with regulations. 3 p. 1916.

Back yard poultry leaflets. 7 p. 1917.
p. 2. Poultry mites.

Descriptions of bureaus and offices of the Department of Agriculture. 1920-1921. 15 nos.

A manual of dangerous insects likely to be introduced into the United States through importations. Ed. by W. D. Pierce. 256 p., illus. 1917. Rev. 1918. [Contrib. from Bur. Ent. in coop. with Fed. Hort. Bd.]

Joint order No. 3. U. S. Treasury Department and Department of Agriculture cooperating. Regulations for the importation into the United States below the southern cattle quarantine line of tick-infested cattle from Mexico, South and Central America, the islands of the Gulf of Mexico and the Caribbean Sea. Effective on and after May 1, 1918. 4 p.

... Study and investigation of boll weevil and hog cholera plagues. Letter from the Secretary of Agriculture, transmitting information regarding the study and investigation of the boll weevil and hog cholera plagues as directed in House Resolution no. 254, dated Sept. 16, 1913. 25 p. (Cong. 63, Sess. 2, House Doc. 463 includes statements from the Bureau of Animal Industry on hog cholera and from the Bureau of Entomology on the boll weevil.)

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Special Reports
(No more published)

1877-1883

No. 2, 5-10, 13-17, 19-21, 23-25, 27, 29-30, 32, 37-39, 41-46, 49, 51-53, 56-61, 64-65 are "Reports on conditions of crops" (title varies), which continue the statistical report previously contained in the Monthly Report of the Department of Agriculture.

7. Report on condition of crops, Aug. 1, 1878. 26 p.
p. 26. Entomological notes.
8. Report on condition of crops, Sept. 1, 1878. 22 p.
p. 8-9. Riley, C. V. Cotton insects.
11. Riley, C. V. The silkworm; being a brief manual of instruction for the production of silk. 31 p. 1879. Ed. 2, 1883, 37 p.; ed. 3, 1883; ed. 4, 1883; ed. 5, 1883.
22. Contagious diseases of domestic animals: Continuation of investigation by Department of Agriculture. 268 p., illus. 1880.
p. 85-86. Charbon, a blood poison, thought to be inserted by horse flies.
35. Comstock, J. H. Report on insects injurious to sugar cane. 11 p., illus. 1881.
36. McMurtrie, William. Report upon statistics of grape culture and wine production in the United States for 1880... 104 p. 1881.
p. 61. Phylloxera vastatrix in Kentucky.
p. 67. Rose bugs.
50. Dissemination of Texas fever of cattle and how to control it. 14 p. 1882.
65. Report on condition of crops and on freight rates of transportation companies. 55 p. Sept., 1883.
p. 25-26. Destruction of cotton worms by birds. John A. Redfield, Miss.

UNITED STATES DEPARTMENT OF AGRICULTURE

Technical Bulletins

(Succeeding Department Bulletins)

3. Patterson, J.E. The relation of highway slash to infestation by the western pine beetle [*Dendroctonus brevicomis* Lec.] in standing timber. 9 p., illus. 1927.
4. McGregor, E.A. *Lygus elisus*: A pest of the cotton regions in Arizona and California. 15 p., illus. 1927.
15. Clausen, C.P. The citrus insects of Japan. 16 p., illus. 1927.
19. Willard, H.F. Parasites of the pink bollworm [*Pectinophora gossypiella* Saunders] in Hawaii. 16 p., illus. 1927.
20. Nougaret, R.L., and Lapham, M.H. A study of *Phylloxera* infestation in California as related to types of soils. 29 p., illus. 1928.
24. Kalmbach, E.R. The magpie in relation to agriculture. 30 p., illus. 1927. [Gives insect food.]
25. Newcomer, E.J., and Yothers, M.A. Experiments for the control of the European red mite [*Paratetranychus pilosus* C. & F.] and other fruit-tree mites. 34 p., illus. 1927.
31. Ainslie, G.G. The larger sod webworm [*Crambus trisectus* Walker]. 17 p., illus. 1927.
34. Luginbill, Philip. The fall army worm [*Laphygma frugiperda* S. and A.]. 92 p., illus. 1928.
41. Holloway, T.E., and Loftin, U.C. The sugar-cane moth borer [*Diatraea saccharalis* Fab.] in the United States. 77 p., illus. 1928.
42. Selkregg, E.R., and Siegler, E.H. Life history of the codling moth [*Carpocapsa pomonella* L.] in Delaware. 61 p., illus. 1928. [Contrib. from Bur. Ent. in coop. with Del. Agr. Exp. Sta.]
48. Burke, H.E. The western cedar pole borer or powder worm [*Trachykele blondeli* Mars.]. 15 p., illus. 1928.
53. Worthley, L.H., and Caffrey, D. J. Scouting, quarantine and control for European corn borer. [*Pyrausta nubilalis* Hbn.], 1917-26. 143 p. 1927.

UNITED STATES DEPARTMENT OF AGRICULTURE

Weekly News Letter

V.1 - v.9, no. 19, Aug. 13, 1913 - Dec. 7, 1921

First two numbers mimeographed. v.1 - v.2, no. 35, have title: Weekly News Letter to Crop Correspondents. Superseded by the Official Record. Contains popular notes on insects of economic importance; the information in practically all cases having appeared in more complete form in some other publication of the department. Signed articles only, for the most part, are here recorded.

- v. 2, no. 12, p. 1. Webster, F.M. How the farmer can detect Hessian fly in his wheat fields if it is present. 1914.
no. 15, p. 1-2. Webster, F.M. Insects destroyed by sheep and useless vegetation turned into mutton and wool. 1915.
no. 35, p. 1. Webster, F.M. The "curlew" bug [*Sphenophorus callosus* Oliv.] driven out by crop rotation. illus. 1915.
no. 37, p. 2. Webster, F.M. Menace to alfalfa. Clover root pest or cucurlio grub a dangerous insect. Disking and harrowing may help. illus. 1915.
no. 48, p. 1-3. Webster, F.M. Fight Hessian flies. Fly now damaging wheat. How to eliminate it from next year's crop. Cooperation between farmers essential. illus. 1915.
- v. 3, no. 17, p. 1-2. Webster, F.M. Weeds harbor insects. Insects pass the winter in vegetation along roads, fences, and ditches, and on waste lands. 1915.
no. 20, p. 1-2. Webster, F.M. Green bug [*Toxoptera graminum* Rond.] appears. Southwestern grain fields infested - Sericus spread may follow favorable weather conditions. 1915.
- v. 4, no. 38, p. 5. Codling moth trap. illus. Apr. 25, 1917.
no. 39, p. 4-6. Quaintance, A. L. Spray to save the fruit crop from insects and disease. May 2, 1917.
no. 46, p. 1. [Kyslop, J.A.] "Underground enemy" [wireworms] ... June 20, 1917.
- v. 5, no. 37, p. 16. How to prevent cutworm losses [poster page]. Apr. 17, 1918.
no. 41, p. 8. How to poison grasshoppers [poster page]. May 5, 1918.
no. 46, p. 16. Spray to control potato pests [poster page]. June 19, 1918.
no. 48, p. 12. How to control white grubs [poster page]. July 3, 1918.
- v. 6, no. 21, p. 16. The European corn borer [poster page]. Dec. 25, 1918.
no. 29, p. 3-5. Dip that tick in March. Feb. 19, 1919.
no. 29, p. 16. Kill that seed tick in March. Feb. 19, 1918 [poster page].
no. 30, p. 16. Dip that tick in March. [poster page]. Feb. 26, 1919.
no. 36, p. 16. The Hessian fly [poster page]. Apr. 9, 1919.
no. 37, p. 16. The alfalfa seed chalcis fly [poster page]. Apr. 16, 1919.
no. 38, p. 16. The wheat jointworm [poster page]. Apr. 23, 1919.
no. 39, p. 9. A dangerous immigrant - watch for him. [European corn borer.] illus. Apr. 30, 1919.

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Weekly News Letter (Cont'd.)

- v. 7, no. 44-45, p. 4, 10-12. Meredith, E.T. Can wipe out cotton pest [pink boll worm]. June 2-9, 1920.
v. 8, no. 22, p. 9. Taylor, W.A. Why control of crop pests is important. Dec. 29, 1920.
no. 27, p. 5. Howard, L.O. Insects our most formidable rivals. Feb. 2, 1921.

Official Record

v.1 - v.6, Jan., 1922 - Dec., 1927

- v. 1, no. 17, p. 1. Dr. Mann brings collection of South American insects. Apr. 26, 1922.
no. 23, p. 3. Airplane attacks being planned [on the gipsy moth]. June 7, 1922.
v. 2, no. 8, p. 1 and 7. May eradicate pink bollworm eventually. Feb. 21, 1923.
no. 23, p. 1-2. Extensive cooperation in department's work. War Department assisting in control investigations of various pests. June 6, 1923.
no. 31, p. 3. Low temperatures kill mill pests. Aug. 1, 1923.
no. 32 and 33, p. 1-2. Insect parasites to be introduced. Aug. 15, 1923.
no. 34, p. 2 and 5... Extensive quarantine against fruit flies. Aug. 22, 1923.
no. 52, p. 1 and 5. Airplane succeeds in weevil campaign. Dusting of cotton from air gives profitable returns in recent tests. Dec. 26, 1923.
v. 3, no. 19, p. 5. Dr. L. O. Howard, May 7, 1924.
v. 4, no. 16, p. 1. [Hyslop, J.A.]. Insect survey may bring forecasting. Apr. 22, 1925.
no. 34, p. 3. Carsner, Eubanks. Spring infection of sugar beet leafhoppers with curly top virus. Aug. 26, 1925.
no. 35, p. 5. Cobb, N.A., Steiner, G., and Christie, J.R. The nemic parasites of grasshoppers. Sept. 2, 1925.
no. 36, p. 3. Hambleton, J.I. Grades for determining standard color grades in samples of extracted honey. Sept. 9, 1925.
no. 41, p. 5. Simmons, Perez. Control of skippers [*Piophilidae casei* L.] in cured meats. Oct. 14, 1925.
no. 42, p. 5. Hyslop, J.A. The insect pest survey. Does the Department of Agriculture make estimates on the damage done by insect pests? Oct. 21, 1925.
no. 48, p. 5. Kerr, A. P., and Smith, C. E. Toxicity of sodium silicofluoride and arsenical mixtures to plant foliage. Dec. 2, 1925.

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Official Record (Cont'd.)

- v. 5, no. 5, p. 5. Back, E.A., and Cotton, R.T. Insect control by vacuum. Feb. 3, 1926.
no.19, p. 5. Dove, W.E. Cause of creeping eruption found by United States entomologists. May 12, 1926.
no.29, p. 3. Carter, Walter. A problem in economic entomology. July 21, 1926.
no.43, p. 6. White, G.F., and Dove, W.E. Dogs and cats concerned in the causation of creeping eruption. Oct. 27, 1926.
v. 6, no.36, p.2. Hyslop, J.A. Insect pest survey. Sept. 27, 1927.
no.41, p. 6. Hyslop, J.A. Insect pest survey. Oct. 12, 1927.
no.43, p. 1 and 8. Dr. Howard retires as Entomology chief. Oct. 26, 1927.
no.43, p. 6. Cobb, N.A., Steiner, G., and Christie, J.R. When and how does sex arise? Oct. 26, 1927.
no.46, p. 5. Hyslop, J.A. Insect pest survey of the United States. Nov. 16, 1927.

Yearbook Articles

The Yearbook was begun in 1894. It contains articles and statistical matter contributed by the various bureaus, divisions, and offices of the department. Most of the articles are reprinted in separate form. Following is a list of those which relate to entomology.

- 1894, p. 249-279. Howard, L.O. Some scale insects of the orchard. illus. 1895. (Y.B. Sep. 12)
p. 277-294. Chittenden, F.H. The more important insects injurious to stored grain. illus. 1895. (Y.B. Sep. 13)
p. 572-576. Marlatt, C.L. Methods of controlling injurious insects, with formulas for insecticides. 1895.
1895, p. 94-105. Marlatt, C.L. The principal insect enemies of the grape. illus. 1896. (Y.B. Sep. 43)
p. 361-384. Howard, L.O. The shade-tree insect problem in the eastern United States. illus. 1896. (Y.B. Sep. 56)
p. 580-586. Methods of controlling injurious insects. 1896.
1896, p. 69-88. Howard, L.O. The use of steam apparatus for spraying. illus. 1897. (Y.B. Sep. 73)
p. 217-236. Marlatt, C.L. Insect control in California. illus. 1897. (Y.B. Sep. 74)

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Yearbook Articles (Cont'd.)

- 1896, p. 341-352. Chittenden, F.H. The asparagus beetles. illus.
1897. (Y.B. Sep. 75)
p. 421-430. Hubbard, H.G. Ambrosia beetles. illus. 1897.
(Y.B. Sep. 72)
p. 617-619. Methods of controlling injurious insects. 1897.
- 1897, p. 84-89. Howard, L.O. Division of entomology. 1898.
(Y.B. Sep. 100)
p. 529-552. Howard, L.O. The danger of importing insect
pests. illus. 1898. (Y.B. Sep. 101)
p. 635-640. Methods of controlling injurious insects. 1898.
- 1898, p. 121-150. Howard, L.O. The principal insects affecting the
tobacco plant. illus. 1899. (Y.B. Sep. 138)
p. 233-260. Chittenden, F.H. Insects injurious to beans and
peas. illus. 1899. (Y.B. Sep. 139)
p. 657-662. Methods of controlling injurious insects. 1899.
- 1899, p. 135-156. Howard, L.O. Progress in economic entomology in
the United States. illus. 1900. (Y.B. Sep. 171)
p. 745-748. The principal injurious insects of the year 1899.
1900.
- 1900, p. 76-106. Howard, L.O. Smyrna fig culture in the United
States. illus. 1901. (Y.B. Sep. 196)
p. 247-290. Marlatt, C.L. The scale insect and mite enemies
of citrus trees. illus. 1901. (Y.B. Sep. 207)
p. 725-729. The principal injurious insects of the year 1900.
1901.
- 1901, p. 177-192. Howard, L.O. Insects as carriers and spreaders
of disease. illus. 1902. (Y.B. Sep. 235)
p. 369-380. Hunter, W.D. The present status of the Mexican
cotton-boll weevil [*Anthonomus grandis* Boh.] in
the United States. illus. 1902. (Y.B. Sep. 243)
p. 459-470. Howard, L.O. Experimental work with fungous
diseases of grasshoppers. illus. 1902.
(Y.B. Sep. 248)
p. 674-679. Chittenden, F.H. The principal injurious and use-
ful insects in 1901. 1902.

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Yearbook Articles (Cont'd.)

- 1902, p. 155-174. Marlatt, C.L. The San Jose scale [*Aspidiotus perniciosus* Comst.]: its native home and natural enemy. illus. 1903. (Y.B. Sep. 261)
- p. 265-282. Hopkins, A.D. Some of the principal enemies of coniferous forests in the United States. illus. 1903. (Y.B. Sep. 268)
- p. 726-733. Chittenden, F.H. The principal injurious insects in 1902. 1903. (Y.B. Sep. 299)
- 1903, p. 137-148. Howard, L.O. The United States Department of Agriculture and silk culture. illus. 1904. (Y.B. Sep. 313)
- p. 205-214. Hunter, W.D. The status of the Mexican cotton-boll weevil [*Anthonomus grandis* Boh.] in the United States. illus. 1904. (Y.B. Sep. 316)
- p. 313-328. Hopkins, A.D. Insect injuries to hardwood forest trees. illus. 1904. (Y.B. Sep. 327)
- p. 563-566. Chittenden, F.H. The principal injurious insects of 1903. 1904. (Y.B. Sep. 335)
- 1904, p. 191-204. Hunter, W.D. Present status of the cotton-boll weevil [*Anthonomus grandis* Boh.] in the United States. illus. 1905. (Y.B. Sep. 341)
- p. 299-310. Chittenden, F.H. The nut weevils. illus. 1905. (Y.B. Sep. 348)
- p. 381-398. Hopkins, A.D. Insect injuries to forest products. illus. 1905. (Y.B. Sep. 355)
- p. 461-474. Marlatt, C.L. The annual loss occasioned by destructive insects in the United States. 1905. (Y.B. Sep. 360)
- p. 600-605. Chittenden, F.H. The principal injurious insects of 1904. 1905. (Y.B. Sep. 368)
- p. 625-626. Crawford, J.C. Method of estimating the yield of cotton in the field. 1905.
- 1905, p. 123-138. Howard, L.O. The gipsy [*Porthetria dispar* L.] and brown-tail [*Euproctis chrysorrhoea* L.] moths and their European parasites. illus. 1906. (Y.B. Sep. 373)
- p. 249-256. Hopkins, A.D. Insect enemies of forest reproduction illus. 1906. (Y.B. Sep. 381)

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Yearbook Articles (Cont'd.)

- 1905, p. 325-348. Quaintance, A.L. The principal insect enemies of the peach. illus. 1906. (Y.B. Sep. 386)
p. 465-476. Webster, F.M. Farm practice in the control of field-crop insects. illus. 1906. (Y.B. Sep. 396)
p. 477-482. Smith, B.H. Formaldehyde: Its composition and uses. 1906. (Y.B. Sep. 397)
p. 628-636. The principal injurious insects of 1905. 1906. (Y.B. Sep. 403)
- 1906, p. 313-324. Hunter, W.D. Some recent studies of the Mexican cotton-boll weevil [*Anthonomus grandis* Boh.]. illus. 1907. (Y.B. Sep. 425)
p. 429-446. Quaintance, A.L. Lime-sulphur washes for the San Jose scale [*Aspidiotus perniciosus* Comst.]. illus. 1907. (Y.B. Sep. 433)
p. 508-517. The principal injurious insects in 1906. 1907. (Y.B. Sep. 438)
- 1907, p. 149-164. Hopkins, A.D. Notable depredations by forest insects. 1908. (Y.B. Sep. 442)
p. 237-256. Webster, F.M. The value of insect parasitism to the American farmer. 1908. (Y.B. Sep. 447)
p. 435-450. Quaintance, A.L. The codling moth or apple worm [*Carpocapsa pomonella* L.]. 1908. (Y.B. Sep. 460)
p. 541-552. The principal injurious insects of the year 1907. 1908. (Y.B. Sep. 472)
- 1908, p. 267-238. Quaintance, A.L. Information about spraying for orchard insects. illus. 1909. (Y.B. Sep. 480)
p. 367-388. Webster, F.M. Some things the grower of cereal and forage crops should know about insects. illus. 1909. (Y.B. Sep. 488)
p. 567-580. The principal injurious insects of the year 1908. 1909. (Y.B. Sep. 499)
- 1909, p. 399-415. Burke, H.E. Injuries to forest trees by flat-headed borers. illus. 1910. (Y.B. Sep. 523)

UNITED STATES DEPARTMENT OF AGRICULTURE

Yearbook Articles (Cont'd.)

- 1910, p. 219-230. Hunter, W.D., and Bishopp, F.C. Some of the more important ticks of the United States. illus. 1911. (Y.B. Sep. 531)
- p. 281-296. Morgan, A.C. Insect enemies of tobacco in the United States. illus. 1911. (Y.B. Sep. 537)
- p. 341-358. Webb, J.L. Injuries to forests and forest products by roundheaded borers. illus. 1911. (Y.B. Sep. 542)
- 1911, p. 201-210. Hunter, W.D. Relation between rotation systems and insect injury in the South. 1912. (Y.B. Sep. 561)
- p. 453-466. Burgess, A.F., and Collins, C.W. The value of predaceous beetles in destroying insect pests. illus. 1912. (Y.B. Sep. 583)
- 1912, p. 279-284. Beal, F.E.L. Our meadowlarks in relation to agriculture. 1913. (Y.B. Sep. 590)
- p. 319-334. Chittenden, F.H. Insects injurious to the onion crop. illus. 1913. (Y.B. Sep. 594)
- p. 383-396. Bishopp, F.C. Some important insect enemies of live stock in the United States. illus. 1913. (Y.B. Sep. 600)
- p. 397-404. McAtee, W.L. Relation of birds to grain aphides. illus. 1913. (Y.B. Sep. 601)
- 1913, p. 75-92. Webster, F.M. Bringing applied entomology to the farmer. illus. 1914. (Y.B. Sep. 616)
- 1914, p. 491-505. Rust, E.W. Edible snails. 1915. (Y.B. Sep. 653)
- 1915, p. 263-272. Webster, F.M. Recent grasshopper outbreaks and latest methods of controlling them. illus. 1916. (Y.B. Sep. 674)
- 1916, p. 273-288. Howard, L.O. The practical use of the insect enemies of injurious insects. illus. 1917. (Y.B. Sep. 704)
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- p. 225-227. Baker, A.C. Citrus aphid [*Aphis spiraecola* Patch] - A new pest in Florida. 1927.
- p. 244-247. Walton, T.R. Corn borer [*Pyrausta nubilalis* Hübner] has invaded corn States. 1927.
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Bureau of Entomology

The Division of Entomology was established in 1863 by the appointment of Townend Glover as Entomologist. Previous to the establishment of the division, articles of entomological interest appeared in the agricultural reports of the Patent Office.

The Annual Reports of the Entomologist are bound with those of the Secretary of Agriculture and for some years have also been issued in separate form, known as author's editions. Reports for 1863-1877 are by Townend Glover; 1877-1878, by C.V. Riley; 1879-1881, by J. H. Comstock; 1882-1893, by C. V. Riley; 1894-1927, by L. O. Howard.

Annual Reports

1863. In Report, Commissioner of Agriculture, 1863, p. 561-579.
1864. In Report, Commissioner of Agriculture, 1864, p. 540-564.
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1873. In Report, Commissioner of Agriculture, 1873, p. 152-169, illus.
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Author's edition, 52 p., 1879.
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Annual Reports (Cont'd.)

1885. In Report, Commissioner of Agriculture, 1885, p. 207-343, illus.
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1902. In Annual reports, Department of Agriculture, 1902, p. 189-207.
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1917. In Annual reports, Department of Agriculture, 1917, p. 227-250.
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1924. Report of the entomologist. 30 p. 1924.
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BUREAU OF ENTOMOLOGY

1 - 33

Bulletins (old series)

1883 - 1895

1. Reports of experiments, chiefly with kerosene, upon insects injuriously affecting the orange tree and the cotton plant, made under the direction of the Entomologist. 62 p. 1883. Ed. 2, 1883; ed. 3, 1885.
2. Reports of observations on the Rocky Mountain locust [*Melanoplus* (*Caloptenus*) *spretus* Uhl.] and chinch bug [*Blissus leucopterus* Say], together with extracts from the correspondence of the division on miscellaneous insects. 56 p. 1883. Ed. 2, 1883.
3. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 75 p., illus. 1883.
4. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist, together with extracts from correspondence on miscellaneous insects. 102 p., illus. 1884.
5. Howard, L. O. Descriptions of North American Chalcididae from the collections of the U. S. Department of Agriculture and of Dr. C.V. Riley, with biological notes. [First paper] Together with a list of the described North American species of the family. 47 p. 1885.
6. The imported elm-leaf beetle [*Galerucella luteola* Müll. (*Galeruca xanthomelaena* Schrank)]. Its habits and natural history, and means of counteracting its injuries. 18 p., illus. 1885. Ed. 2, 1891.
7. Osborn, Herbert. The Pediculi and Mallophaga affecting man and the lower animals. 56 p., illus. 1891.
8. Riley, C. V. The periodical Cicada. An account of *Cicada septendecim* and its tredecim race, with a chronology of all the broods known. 46 p., illus. 1885. Ed. 2, 1885.
9. Riley, C.V. The mulberry silk-worm [*Bombyx mori* L.]; being a manual of instructions in silk culture. Ed. 6, rev., 1886. [Eds. 1-5 are the same as "Special report No. 11, Office of the Secretary."] Ed. 7, 1888, 65 p., illus.
10. Riley, C.V. Our shade trees and their insect defoliators. Being a consideration of the four most injurious species which affect the trees of the Capital, with means of destroying them. 75 p., illus. 1887. Ed. 2, rev., 1888.
11. Reports of experiments with various insecticide substances, chiefly upon insects affecting garden crops, made under the direction of the Entomologist. 34 p. 1886.
12. Miscellaneous notes on the work of the Division of Entomology for the season of 1885, prepared by the Entomologist. 46 p., illus. 1886.
13. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 78 p., illus. 1887.
14. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 62 p., illus. 1887.

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Bulletins (old series) (Cont'd.)

15. The *Icerya*, or fluted scale, otherwise known as the cottony cushion-scale [*Icerya purchasi* Mask.]. Reprint of some recent articles by the Entomologist, and of a report from the agricultural experiment station, University of California. 40 p. 1887.
16. Henshaw, Samuel. The entomological writings of Dr. Alpheus Spring Packard. 49 p. 1887.
17. Howard, L. O. The chinch bug [*Blissus leucopterus* Say]: A general summary of its history, habits, enemies, and of the remedies and preventives to be used against it. 48 p., illus. 1888.
18. Dodge, C.R. The life and entomological work of the late Townend Glover. 68 p., illus. 1888.
19. Schwarz, E.A. An enumeration of the published synopses, catalogues, and lists of North American insects; together with other information intended to assist the student of American entomology. 77 p. 1888.
20. Neal, J.C. The root-knot disease of the peach, orange, and other plants in Florida, due to the work of *Anguillula*. 31 p., illus. 1889.
21. Koebele, Albert. Report of a trip to Australia, made under the direction of the Entomologist, to investigate the natural enemies of the fluted scale [*Icerya purchasi* Mask.]. 32 p., illus. 1890. Rev: 1890, 32 p., illus.
22. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 110 p., illus. 1890.
23. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 83 p. 1891.
24. Mally, F.W. The bollworm of cotton [*Chloridea obsoleta* Fab. (*H. armigera* Hübn.)]. A report of progress in a supplementary investigation of this insect. 50 p., illus. 1891.
25. Riley, C.V. Destructive locusts. A popular consideration of a few of the more injurious locusts (or "grasshoppers") of the United States, together with the best means of destroying them. 62 p., illus. 1891.
26. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 95 p. 1892.
27. Reports on the damage of destructive locusts during the season of 1891, made under the direction of the Entomologist. 64 p. 1892.
28. Bruner, Lawrence. The more destructive locusts of America north of Mexico. 40 p., illus. 1893.
29. Mally, F.W. Report of the bollworm of cotton [*Heliothis obsoleta* Fab. (*H. armigera* Hübn.)]. 73 p., illus. 1893.
30. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 67 p. 1893.
31. Catalogue of the exhibit of economic entomology at the World' Columbian Exposition, Chicago, Ill., 1893, made under the direction of the Entomologist. 121 p. 1893.
32. Reports of observations and experiments in the practical work of the division, made under the direction of the Entomologist. 59 p. 1894.
33. Howard, L.O. Legislation against injurious insects; a compilation of the laws and regulations in the United States and British Columbia. 46 p. 1895.

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1 - 127

Bulletins (new series)

1896 - 1914

1. Benton, Frank. The honey bee: [*Apis mellifica* L.] A manual of instruction in apiculture. 118 p., illus. 1896. Revised 1896; Ed. 3, 1899, 54th Cong., 1st sess., H. Doc. 359, serial No. 3435.
2. Proceedings of the seventh annual meeting of the Association of Economic Entomologists. 100 p., illus. 1895.
3. Howard, L.O., and Marlatt, C.L. The San Jose scale [*Aspidiotus perniciosus* Comst.]; Its occurrence in the United States, with a full account of its life history and the remedies to be used against it. 80 p., illus. 1896.
4. Howard, L.O., and Marlatt, C.L. The principal household insects of the United States. With a chapter on insects affecting dry vegetable foods. 130 p., illus. 1896. Revised 1902, 131 p., illus.
5. Osborn, Herbert. Insects affecting domestic animals: An account of the species of importance in North America, with mention of related forms occurring on other animals. 302 p., illus. 1896.
6. Proceedings of the eighth annual meeting of the Association of Economic Entomologists. 100 p., illus. 1896.
7. Some miscellaneous results of the work of the Division of Entomology. Prepared under the direction of L. O. Howard, Entomologist. 87 p., illus. 1897.
8. Chittenden, F.H. Some little-known insects affecting stored vegetable products: A collection of articles detailing certain original observations made upon insects of this class. 45 p., illus. 1897.
9. Proceedings of the ninth annual meeting of the Association of Economic Entomologists. 87 p., illus. 1897.
10. Some miscellaneous results of the work of the Division of Entomology. Prepared under the direction of L. O. Howard, Entomologist, 99 p., illus. 1898.
11. Howard, L.O. The gipsy moth in America: A summary account of the introduction and spread of *Porthetria dispar* [L.] in Massachusetts and of the efforts made by the State to repress and exterminate it. 39 p., illus. 1897.
12. Howard, L.O. The San Jose scale [*Aspidiotus perniciosus* Comst.] in 1896-1897. 31 p., illus. 1898.
13. Howard, L.O., comp. Recent laws against injurious insects in North America, together with the laws relating to foul brood. 68 p. 1898.
14. Marlatt, C.L. The periodical Cicada: An account of *Cicada septendecim* [L.], its natural enemies, and the means of preventing its injury, together with a summary of the distribution of the different broods. 148 p., illus. 1898.
15. Webster, F.M. The chinch bug [*Blissus leucopterus* Say]: Its probable origin and diffusion, its habits and development, natural checks and remedial and preventive measures, with mention of the habits of an allied European species. 82 p., illus. 1898. (Superseded by No. 69.)

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Bulletins (new series)(Cont'd.)

16. Osborn, Herbert. The Hessian fly [*Cecidomyia* Mayetiola destructor Say] in the United States. 57 p., illus. 1893.
17. Proceedings of the tenth annual meeting of the Association of Economic Entomologists. 104 p., illus. 1898.
18. Some miscellaneous results of the work of the Division of Entomology. III. Prepared under the direction of L.O. Howard, Entomologist. 101 p., illus. 1898.
19. Chittenden, F.H. Some insects injurious to garden and orchard crops. A series of articles dealing with insects of this class. 99 p., illus. 1899.
20. Proceedings of the eleventh annual meeting of the Association of Economic Entomologists. 111 p., illus. 1899.
21. Hopkins, A.D. Preliminary report on the insect enemies of forests in the Northwest. An account of the results gained from a reconnaissance trip made in the spring and early summer of 1899. 27 p. 1899.
22. Some miscellaneous results of the work of the Division of Entomology. IV. Prepared under the direction of L.O. Howard, Entomologist. 109 p., illus. 1900.
23. Chittenden, F.H. Some insects injurious to garden crops. A series of articles dealing with insects of this class. 92 p., illus. 1900.
24. Banks, Nathan., comp. A list of works on North American entomology. 95 p. 1900.
25. Howard, L.O. Notes on the mosquitoes of the United States: Giving some account of their structure and biology, with remarks on remedies. 70 p., illus. 1900.
26. Proceedings of the twelfth annual meeting of the Association of Economic Entomologists. 102 p., illus. 1900.
27. Chittenden, F.H. Some insects injurious to the violet, rose, and other ornamental plants. A collection of articles dealing with insects of this class. 114 p., illus. 1901. Revised 1901.
28. Hopkins, A.D. Insect enemies of the spruce in the Northeast. A popular account of results of special investigations, with recommendations for preventing losses. 80 p., illus. 1901.
29. Chittenden, F.H. The fall army worm [*Laphygma frugiperda* S. & A.] and variegated cutworm [*Peridroma margaritosa* Haw. (*saucia* Hbn.)]. 64 p., illus. 1901.
30. Some miscellaneous results of the work of the Division of Entomology. V. Prepared under the direction of L.O. Howard, Entomologist. 38 p., illus. 1901.
31. Proceedings of the thirteenth annual meeting of the Association of Economic Entomologists. 103 p., illus. 1901.
32. Hopkins, A.D. Insect enemies of the pine in the Black Hills Forest Reserve. An account of results of special investigations, with recommendations for preventing losses. 24 p., illus. 1902.
33. Chittenden, F. H. Some insects injurious to vegetable crops. A series of articles dealing with insects of this class. 117 p., illus. 1902.
34. Banks, Nathan. The principal insects liable to be distributed on nursery stock. 46 p., illus. 1902.

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Bulletins (new series) (Cont'd.)

35. Simpson, C.B. Report on codling-moth [*Carpocapsa pomonella* L.] investigations in the Northwest during 1901. 29 p., illus.
36. Banks, Nathan. An index to Bulletins Nos. 1-30 (new series) (1896-1901) of the Division of Entomology. 64 p. 1902.
37. Proceedings of the fourteenth annual meeting of the Association of Economic Entomologists. 127 p., illus. 1902.
38. Some miscellaneous results of the work of the Division of Entomology. VI. Prepared under the direction of the Entomologist. 110 p., illus. 1902.
39. Kelly, H.A. The culture of the mulberry silkworm [*Bombyx mori* L.]. 32 p., illus. 1903.
40. Proceedings of the fifteenth annual meeting of the Association of Economic Entomologists. 124 p., illus. 1903.
41. Simpson, C.B. The codling-moth [*Carpocapsa pomonella* L.]. 105 p., illus. 1903.
42. Webster, F.M. Some insects attacking the stems of growing wheat, rye, barley, and oats, with methods of prevention and suppression. 62 p., illus. 1903.
43. Chittenden, F.H. A brief account of the principal insect enemies of the sugar beet. 71 p., illus. 1903.
44. Some miscellaneous results of the work of the Division of Entomology. VII. Prepared under the direction of the Entomologist. 99 p., illus. 1904.
45. Hunter, W. D., and Hinds, W.E. The Mexican cotton boll weevil [*Anthonomus grandis* Boh.]. 116 p., illus. 1904.
46. Proceedings of the sixteenth annual meeting of the Association of Economic Entomologists. 113 p., illus. 1904.
47. Titus, E.S.G., and Pratt, F.C. Catalogue of the exhibit of economic entomology at the Louisiana Purchase Exposition, St. Louis, Mo. 155 p., 1904. Revised, 1904.
48. Hopkins, A.D. Catalogue of exhibits of insect enemies of forests and forest products at the Louisiana Purchase Exposition, St. Louis, Mo. 56 p., illus. 1904.
49. Cook, O.F. Report on the habits of the kelep, or Guatemalan cotton-boll-weevil ant [*Ectatomma tuberculatum* Ol.]. 15 p. 1904.
50. Quaintance, A.L., and Brues, C.T. The cotton bollworm [*Heliothis obsoleta* Fab.]. 155 p., illus. 1905.
51. Hunter, W.D., and Hinds, W.E. The Mexican cotton boll weevil [*Anthonomus grandis* Boh.]. A revision and amplification of Bulletin 45, to include the most important observations made in 1904. 818 p., illus. 1905. 58th Cong., 3d sess., H. Doc. 383.
52. Proceedings of the seventeenth annual meeting of the Association of Economic Entomologists. 123 p., illus. 1905.
53. Currie, R.P. Catalogue of the exhibit of economic entomology at the Lewis and Clark Centennial Exposition, Portland, Oregon. 127 p. 1905.
54. Some miscellaneous results of the work of the Bureau of Entomology. VIII. Prepared under the direction of the Entomologist. 99 p., illus. 1905.

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Bulletins (new series) (Cont'd.)

55. Phillips, E.F. The rearing of queen bees. 32 p., illus. 1905.
56. Hopkins, A.D. The Black Hills beetle [*Dendroctonus ponderosae* Hopk.], with further notes on its distribution, life history, and methods of control. 24 p., illus. 1905.
57. Sanderson, E.D. Report on miscellaneous cotton insects in Texas. 63 p., illus. 1906.
58. Some insects injurious to forests.
- I. p. 1-16. Hopkins, A.D. The locust borer. (*Cyllene robiniae* Forst.) illus. 1906.
 - II. p. 17-30. Webb, J.L. The western pine-destroying bark-beetle. (*Dendroctonus brevicornis* Lec.) illus. 1906.
 - III. p. 31-40. Hopkins, A.D. Additional data on the locust borer. (*Cyllene robiniae* Forst.) 1907.
 - IV. p. 41-56. Webb, J.L. The southern pine sawyer. (*Monohammus titillator* Fab.) illus. 1909.
 - V. p. 57-101. Hopkins, A.D. Insect depredations in North American forests and practical methods of prevention and control. 1909.
 - p. 103-114. Contents and index. 1910.
- Issued as a whole. 114 p., illus. 1910.
59. Hinds, W.E. Proliferation as a factor in the natural control of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.]. 45 p., illus. 1906.
60. Proceedings of the eighteenth annual meeting of the Association of Economic Entomologists. 206 p., illus. 1906.
61. Howard, L.O. and Burgess, A.F. The laws in force against injurious insects and foul brood in the United States. 222 p. 1906.
62. Marlatt, C.L. The San Jose or Chinese scale [*Aspidiotus perniciosus* Comst.]. 89 p., illus. 1906.
63. Papers on the cotton boll weevil and related and associated insects.
- I. p. 1-38. Sanderson, E.D. Hibernation and development of the cotton boll weevil [*Anthonomus grandis* Boh.]. illus. 1907.
 - II. p. 39-44. Pierce, W.D. Notes on the biology of certain weevils related to the cotton boll weevil. illus. 1907.
 - III. p. 45-48. Hinds, W.E. An ant-enemy [*Solenopsis geminata* Fab., var. *xyloni* McC.] of the cotton boll weevil. illus. 1907.
 - IV. p. 49-54. Morgan, A.C. A predatory bug reported as an enemy of the cotton boll weevil. (*Apiomerus spissipes* Say.) illus. 1907.
 - V. p. 55-58. Pratt, F.C. Notes on the pepper weevil. (*Anthonomus aeneotinctus* Champ.) illus. 1907.
 - VI. p. 59-62. Morrill, A.W. The strawberry weevil in the south-central States in 1905. (*Anthonomus signatus* Say.)

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p. 67-71. Contents and index. 1909.
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64. Some miscellaneous results of the work of the Bureau of Entomology.
- I. p. 1-14. Morrill, A.W. The Mexican conchuela in western Texas in 1905. (*Pentatoma ligata* Say.) illus. 1907.
- II. p. 15-22. Pierce, W.D. Notes on the economic importance of sowbugs. illus. 1907.
- III. p. 23-28. Pratt, F.C. Notes on "punkies." (*Ceratopogon* spp.) illus. 1907.
- IV. p. 29-32. Chittenden, F.H. An injurious North American species of *Apion* [*Apion griseum* Sm.], with notes on related forms. illus. 1908.
- V. p. 32-42. Chittenden, F.H. Insects injurious to the loco weeds. illus. 1908.
- VI. p. 43-60. Russell, H.M. The greenhouse thrips. (*Heliothrips haemorrhoidalis* Bouché.) illus. 1909.
- VII. p. 61-64. Tucker, E.S. New breeding records of the coffee-bean weevil. (*Araecerus fasciculatus* DeGeer) illus. 1909.
- VIII. p. 65-71. Back, E.A. The woolly white-fly: A new enemy of the Florida orange. (*Aleyrodes howardi* Quaintance.) illus. 1910.
- IX. p. 73-78. Notes on a Colorado ant. (*Formica cinereorufibarbis* Forel.) 1910.
- X. p. 79-86. Russell, H.M. The pecan cigar case-bearer. (*Coleophora caryaefoliella* Clem.) illus. 1910.
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- I. p. 1-10. Chittenden, F.H. The asparagus miner. (*Agromyza simplex* Loew.) Notes on the asparagus beetles. [*Crioceris asparagi* L. and *C. 12-punctata* L.] illus. 1907.
- II. p. 11-20. Chittenden, F.H. The water-cress sowbug. (*Mancasellus brachyurus* Harger.) The water-cress leaf-beetle. (*Phaedon aeruginosa* Suffr.) illus. 1907.
- III. p. 21-32. Chittenden, F.H. The cranberry spanworm. (*Cleora pampinaria* Guen.) The striped garden caterpillar. (*Mamestra legitima* Grote.) illus. 1907.
- IV. p. 33-52. Ball, E.D. The leafhoppers of the sugar beet and their relation to the "curly-leaf" condition. illus. 1909.

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66. V. p. 53-70. Chittenden, F.H., and Russell, H.M. The semitropical army worm. (*Prodenia eridania* Cram.) illus. 1909.
VI. p. 71-92. Chittenden, F.H. The hop flea-beetle. (*Psylliodes punctulata* Melsh.) illus. 1909.
VII. p. 93-97. Chittenden, F.H. Miscellaneous notes on truck-crop insects. 1909.
p. 99-108. Contents and index. 1910.
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67. Proceedings of the nineteenth annual meeting of the Association of Economic Entomologists. 145 p., illus. 1907.
68. Papers on deciduous fruit insects and insecticides.
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II. p. 17-22. Quaintance, A.L. The spring canker-worm. (*Paleacrita vernata* Peck.) illus. 1907.
III. p. 23-30. Quaintance, A.L. The trumpet leaf-miner of the apple. (*Tischeria malifoliella* Clemens.) illus. 1907.
IV. p. 31-49. Girault, A.A. The lesser peach borer. (*Synanthedon pictipes* G. & R.) illus. 1907.
V. p. 49-60. Quaintance, A.L. The lesser apple worm. (*Enarmonia prunivora* Walsh.) illus. 1908.
VI. p. 61-68. Johnson, Fred. Grape root-worm [*Fidia viticida* Walsh] investigations in 1907. illus. 1908.
VII. p. 69-76. Demonstration spraying for the codling moth [*Carpocapsa pomonella* L.]. 1908.
VIII. p. 77-90. Jones, P.R. The grape-leaf skeletonizer. (*Harrisina americana* Guérin-Meneville.) illus. 1909.
IX. p. 91-108. Wilson, H.F. The peach-tree barkbeetle. (*Phloeotribus liminaris* Harr.) illus. 1909.
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70. Reports of the meeting of inspectors of apiaries, San Antonio, Texas. 79 p., illus. 1907.
71. Marlatt, C.L. The periodical cicada [*Tibicen septendecim* L.]. 181 p., illus. 1907. Reprint 1923. 183 p.
72. Hunter, W.D., and Hooker, W.A. Information concerning the North American fever tick [(*Boophilus*) *Margaropus annulatus* Say], with notes on other species. 87 p., illus. 1907.
73. Pierce, W.D. Studies of parasites of the cotton boll weevil [*Anthonomus grandis* Boh.]. 63 p., illus. 1908.
74. Hinds, W.E. Some factors in the natural control of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.]. 79 p., illus. 1907.

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75. Miscellaneous papers on apiculture.

- I. p. 1-18. Phillips, E.F. Production and care of extracted honey. Browne, C.A. Methods of honey testing for bee keepers. 1907.
- II. p. 19-22. Phillips, E.F. Wax moths [*Galleria mellonella* L. and *Achroia grisella* Fab.] and American foul brood. illus. 1907.
- III. p. 23-32. Gates, B.N. Bee diseases in Massachusetts. illus. 1908.
- IV. p. 33-42. White, G.F. The relation of the etiology (cause) of bee diseases to the treatment. 1908.
- V. p. 43-58. Phillips, E.F. A brief survey of Hawaiian bee-keeping. illus. 1909.
- VI. p. 59-80. Phillips, E.F. The status of apiculture in the United States. 1909.
- VII. p. 81-109. Gates, B.N. Bee keeping in Massachusetts. illus. 1909.
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78. Howard, L.O. Economic loss to the people of the United States through insects that carry disease. 40 p. 1909. Revised 1909.
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 - I. p. 1-32. Jenne, E.L. The codling moth [*Carpocapsa pomonella* L.] in the Ozarks. illus. 1909.
 - II. p. 33-44. Hammar, A.G. The cigar case-bearer. (*Coleophora fletcherella* Fernald.) illus. 1909.
 - III. p. 45-50. Foster, S.W., and Jones, P.R. Additional observations on the lesser apple worm. (*Enarmonia prunivora* Walsh.) illus. 1909.
 - IV. p. 51-66. Moulton, Dudley. The pear thrips and its control. (*Euthrips pyri* Daniel.) illus. 1909.
 - V. p. 67-70. Foster, S.W. On the nut-feeding habits of the codling moth [*Carpocapsa pomonella* L.]. illus. 1910.
 - VI. p. 71-111. Hammar, A.G. Life history of the codling moth [*Carpocapsa pomonella* L.] in northwestern Pennsylvania. illus. 1910.
 - VII. p.113-146. Quaintance, A.L., Jenne, E.L., Scott, E.W., and Braucher, R.W. The one-spray method in the control of the codling moth [*Carpocapsa pomonella* L.] and the plum curculio [*Conotrachelus nemophar* Hbst.]. illus. 1910. Revised 1911.

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81. Banks, Nathan. A list of works on North American entomology. Compiled for the use of students and other workers as well as for those about to begin the collection and study of insects. 120 p. 1910.
82. Some insects injurious to truck crops.
I. p. 1-8. Popenoe, C.H. The Colorado potato beetle [*Leptinotarsa decemlineata* Say] in Virginia in 1908. illus. 1909. In cooperation with the Virginia Truck Experiment Station.
II. p. 9-24. Chittenden, F.H. The parsnip leaf-miner. (*Acidia fratria* Loew.) The parsley stalk weevil. (*Listronotus latiusculus* Boh.) The celery caterpillar. (*Papilio polyxenes* Fab.) illus. 1909.
III. p. 25-32. Chittenden, F.H. The lima-bean pod-borer. (*Etiella zinckenella* Treit.) The yellow-necked flea beetle. (*Disonycha mellicollis* Say.) illus. 1909.
IV. p. 33-58. Parker, W.B. The life history and control of the hop flea-beetle. (*Psylliodes punctulata* Melsh.) illus. 1910.
V. p. 59-66. Marsh, H.O. Biologic and economic notes on the yellow-bear caterpillar. (*Diacrisia virginica* Fab.) illus. 1910.
VI. p. 67-84. Chittenden, F.H. Notes on the cucumber beetles. Marsh, H.O. Biologic notes on species of *Diabrotica* in southern Texas. illus. 1910.
VII. p. 85-93. Chittenden, F.H. Notes on various truck-crop insects. illus. 1911.
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83. Practical information on the scolytid beetles of North American forests.
I. p. 1-169. Hopkins, A.D. Barkbeetles of the genus *Dendroctonus*. illus. 1909. (No more published.)
84. Quaintance, A.L. Fumigation of apples for the San Jose scale [*Aspidiotus perniciosus* Const.]. 43 p., illus. 1909.
85. Papers on cereal and forage insects.
I. p. 1-12. Webster, F.M. The lesser clover-leaf weevil. (*Phytonomus nigrirostris* Fab.) illus. 1909.
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II. p. 13-28. Phillips, W.J. The slender seed-corn ground-beetle. (*Clivina impressifrons* Lec.) illus. 1909.

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85. III. p. 29-38. Wildermuth, V.L. The clover-root curculio. (*Sitona hispidulus* Fab.) illus. 1910.
IV. p. 39-58. Dean, W.H. The sorghum midge. (*Contarinia* (*Diplosis*) *sorghicola* Coq.) illus. 1910. Revised 1911.
V. p. 59-96. Ainslie, C.N. The New Mexico range caterpillar. (*Hemileuca oliviae* Ckll.) illus. 1910.
VI. p. 97-118. Vickery, R.A. Contributions to a knowledge of the corn root-aphis. (*Aphis maidi-radici* Forbes.) 1910.
VII. p. 119-132. Hyslop, J.A. The smoky crane-fly. (*Tipula infuscata* Loew.) illus. 1910.
VIII. p. 133-146. Ainslie, G.G. The cowpea curculio. (*Chalcodermus aeneus* Boh.) illus. 1910.
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86. Morrill, A.W. Plant bugs injurious to cotton bolls. 110 p., illus. 1910.
87. Rogers, D.M., and Burgess, A.F. Report on the field work against the gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.]. 31 p., illus. 1910.
88. Howard, L.O. Preventive and remedial work against mosquitoes. 126 p. 1910.
89. Johnson, Fred, and Hammar, A.G. The grape root-worm [*Fidia viticida* Walsh] with especial reference to investigations in the Erie grape belt from 1907 to 1909. 100 p., illus. 1910.
90. Hydrocyanic-acid gas fumigation in California. 1911.
I. p. 1-82. Woglum, R.S. Fumigation of citrus trees. illus. 1911.
II. p. 83-90. Woglum, R.S. The value of sodium cyanid for fumigation purposes. illus. 1911.
III. p. 91-105. McDonnell, C.C. Chemistry of fumigation with hydrocyanic-acid gas. illus. 1911.
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91. Howard, L.O., and Fiske, W.F. The importation into the United States of the parasites of the gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.]: A report of progress, with some consideration of previous and concurrent efforts of this kind. 312 p., illus. 1911.
Same, 62d Cong., 3d sess., House Doc. 977. 1912. (Really a second corrected edition.) 344 p., illus. 1912.
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92. Morrill, A.W., and Back, E.A. White flies injurious to citrus in Florida. 109 p., illus. 1911.
93. Van Dine, D.L. The sugar-cane insects of Hawaii. 54 p., illus. 1911.

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94. Insects injurious to forests and forest products.
- I. p. 1-12. Snyder, T.E. Damage to chestnut telephone and telegraph poles by wood-boring insects. illus. 1910.
 - II. p. 13-85. Snyder, T.E. Biology of the termites of the Eastern United States, with preventive and remedial measures. illus. 1915.
 - p. 87-95. Contents and index. 1916.
95. Papers on cereal and forage insects.
- I. p. 1-9. Phillips, W.J. The timothy stem-borer, a new timothy insect. (*Mordellistena ustulata* Lec.) illus. 1911.
 - II. p. 11-22. Kelly, E.O.G. The maize billbug. (*Sphenophorus maidis* Chittn.) illus. 1911.
 - III. p. 23-52. Kelly, E.O.G., and Parks, T.H. Chinch-bug [*Blissus leucopterus* Say] investigations west of the Mississippi River. illus. 1911.
 - IV. p. 53-71. Webster, F.M. The so-called "curlew bug." (*Sphenophorus callosus* Oliv.) illus. 1910.
 - V. p. 73-87. Hyslop, J.A. The false wireworms of the Pacific Northwest. illus. 1912.
 - VI. p. 89-108. Hyslop, J.A. The legume pod moth. (*Etiella zinckenella schisticolor* Zell.) The legume pod maggot. (*Pegomya planipalpis* Stein.) illus. 1912.
 - VII. p. 109-118. Hyslop, J.A. The alfalfa looper in the Pacific Northwest. (*Autographa gamma californica* Speyer.) illus. 1912.
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96. Papers on insects affecting stored products.
- I. p. 1-18. Chittenden, F.H. A list of insects affecting stored cereals. The Mexican grain beetle. (*Pharaxonotha kirschi* Reitt.) The Siamese grain beetle. (*Lophocateres pusillus* Klug.) illus. 1911.
 - II. p. 19-28. Chittenden, F.H. The broad-nosed grain weevil. (*Caulophilus latinasus* Say.) The long-headed flour beetle. (*Latheticus oryzae* Waterh.) illus. 1911.
 - III. p. 29-52. Chittenden, F.H. The lesser grain-borer. (*Rhizopertha dominica* Fab.) The larger grain borer. (*Dinoderus truncatus* Horn.) illus. 1911.
 - IV. p. 53-57. Chittenden, F.H., and Popenoe, C.H. Carbon tetrachlorid as a substitute for carbon bisulphid in fumigation against insects. 1911.
 - V. p. 59-82. Chittenden, F.H. The broad-bean weevil. (*Larix rufimana* Boh.) illus. 1912.
 - VI. p. 83-94. Chittenden, F.H. The cowpea weevil. (*Pachymerus chinensis* L.) illus. 1912.
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- I. p. 1-12. Johnson, Fred. Spraying experiments against the grape leafhopper [*Typhlocyba comes* Say] in the Lake Erie Valley. illus. 1911.
 - II. p. 13-51. Foster, S.W. Life history of the codling moth [*Carpocapsa pomonella* L.] and its control on pears in California. illus. 1911.
 - III. p. 53-64. Johnson, Fred. Vineyard spraying experiments against the rose chafer [*Macrodactylus subspinosus* Fab.] in the Lake Erie Valley. illus. 1911.
 - IV. p. 65-89. Moulton, Dudley. The California peach borer. (*Sannioidea opalescens* Hy.Edw.) illus. 1911.
 - V. p. 91-102. Cushman, R.A. Notes on the peach and plum slug. (*Caliroa* [*Eriocampoides*] *amygdalina* Rbhwer.) illus. 1911.
 - VI. p. 103-114. Quaintance, A.L. The peach bud mite. (*Tarsonemus waitei* Banks, Mss.) illus. 1912.
 - VII. p. 115-124. Zimmer, J.F. The grape scale. (*Aspidiotus* [*Diaspidiotus*] *uvae* Comst.) illus. 1912.
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99. Papers on insects injurious to citrus and other subtropical fruits.
- I. p. 1-16. Jones, P.R., and Horton, J.R. The orange thrips [*Euthrips citri* Moulton]. A report of progress for the years 1909 and 1910. illus. 1911.
 - II. p. 17-29. Russell, H.M. The red-banded thrips. (*Heliothrips rubrocinctus* Giard.) illus. 1912.
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101. Burgess, A.F. *Calosoma sycophanta* [L.]: Its life history, behavior, and successful colonization in New England. 94 p., illus. 1911.
102. Morrill, A.W., and Back, E.A. Natural control of white flies in Florida. 78 p., illus. 1912.
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105. Hunter, W.D., and Bishopp, F.C. The Rocky Mountains spotted fever tick [*Dermacentor venustus* Banks and *D. albipictus* Packard.], with special reference to the problem of its control in the Bitter Root Valley in Montana. 46 p., illus. 1911.
106. Hooker, W.A., Bishopp, F.C., and Wood, H.P. The life history and bionomics of some North American ticks. 239 p., illus. 1912.

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108. Osborn, Herbert, Leafhoppers affecting cereals, grasses, and forage crops. 123 p., illus. 1912.
109. Papers on insects affecting vegetables.
- I. p. 1-15. Marsh, H.O. The Hawaiian beet webworm. (*Hymenia fascialis* Cram.) With descriptions and an appendix by F.H. Chittenden, illus. 1911.
 - II. p. 17-22. Chittenden, F.H. The southern beet webworm. (*Pachyzancla bipunctalis* Fab.) illus. 1911.
 - III. p. 23-45. Chittenden, F.H., and Marsh, H.O. The imported cabbage webworm. (*Hellula undalis* Fab.) illus. 1912.
 - IV. p. 47-51. Chittenden, F.H. A little-known cutworm. (*Porosagrotis vetusta* Walk.) illus. 1912.
 - V. p. 53-56. Johnson, Fred A. Arsenite of zinc and lead chromate as remedies against the Colorado potato beetle [*Leptinotarsa decemlineata* Say.]. (In coop. with Va. Truck Expt. Sta.) 1912.
 - VI. p. 57-70. Marsh, H.O. A report of progress regarding the sugar-beet webworm. (*Loxostege sticticalis* L.) illus. 1912.
 - VII. p. 71-76. Marsh, H.O. The horse-radish webworm. (*Plutella armoracia* Busck.) illus. 1913.
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111. Parker, W.B. The hop aphis in the Pacific region. (*Phorodon humuli* Schrank.) 43 p., illus. 1913.
112. Webster, F.M. Preliminary report on the alfalfa weevil [*Phytonomus posticus* Gyll.] 47 p., illus. 1912.
113. Hunter, W.D., Pratt, F.C., and Mitchell, J.D. The principal cactus insects of the United States. 71 p., illus. 1912.
114. Hunter, W.D., and Pierce, W.D. Mexican cotton-boll weevil: Message from the President of the United States transmitting a communication from the Secretary of Agriculture submitting a report on the Mexican cotton-boll weevil [*Anthonomus grandis* Boh.]. 62d Cong. 2d sess., Senate Doc. 305. 188 p., illus. 1912.
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- I. p. 1-86. Hammar, A.G. Life-history studies on the codling moth [*Carpocapsa pomonella* L.] in Michigan. illus. 1912.
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 - III. p. 113-181. Jones, P.R., and Davidson, W.M. Life history of the codling moth [*Carpocapsa pomonella* L.] in the Santa Clara Valley of California. illus. 1913.
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- I. p. 1-13. Johnson, Fred. Spraying experiments against the grape leafhopper [*Typhlocyba comes* Say, var. *coloradensis*] in the Lake Erie Valley in 1911. illus. 1912.
 - II. p. 15-71. Johnson, Fred, and Hammar, A.G. The grape-berry moth. (*Polychrosis viteana* Clem.) illus. 1912.
 - III. p. 73-79. Foster, S.W. The cherry fruit sawfly (*Hoplocampa cookei* Clarke.). illus. 1913.
 - IV. p. 81-90. Scott, E.W., and Siegler, E.H. Lime-sulphur as a stomach poison for insects. illus. 1913.
 - V. p. 91-110. Gill, J.B. The fruit tree leaf-roller. (*Archips argyrospila* Walk.) illus. 1913.
 - p. 111-117. Contents and index. 1915.
117. Parker, W.B. The red spider [*Tetranychus bimaculatus* Harvey] on hops in the Sacramento Valley of California. 41 p., illus. 1913.
118. Russell, H.M. The bean thrips [*Heliothrips fasciatus* Pergande]. 49 p., illus. 1912.
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121. Casteel, D.B. The behavior of the honey bee [*Apis mellifera* L.] in pollen collecting. 36 p., illus. 1912.
122. Newell, Wilmon, and Barber, T.C. The Argentine ant [*Iridomyrmex humilis* Mayr.]. 98 p., illus. 1913.
123. Graf, J.E. A preliminary report on the sugar-beet wireworm [*Limonius californicus* Mannh.]. 68 p., illus. 1914.
124. Chittenden, F.H. The rose slug-caterpillar [*Euclea indetermina* Boisd.]. 9 p., illus. 1913.
125. Chittenden, F.H. The Florida fern caterpillar [*Eriopus floridensis* Guen.]. 11 p., illus. 1913.
126. Chittenden, F.H. The abutilon moth [*Cosmophila erosa* Hübn.]. 10 p., illus. 1913.
127. Papers on insects affecting vegetable and truck crops.
- I. p. 1-11. Chittenden, F.H. The spotted beet webworm. (*Hymenia perspectalis* Hübn.) illus. 1913.
 - II. p. 13-18. Marsh, H.O. The striped beet caterpillar. (*Mamestra trifolii* Rott.) illus. 1913.
 - p. 19-21. Contents and index. 1914.

UNITED STATES DEPARTMENT OF AGRICULTURE

DIVISION OF ENTOMOLOGY

Circulars (first series)

The whole number of these circulars exceeded forty; they were nearly all circular letters, of which the following are known to be in existence.

1. (Silk-culture circular, No.1) Sept. 1, 1884. Signed: Geo. B. Loring, Comr. Agr. 2 p.
- 1,b.[Re: Silk-worm eggs.] 1885, and Application blank for silk-worm eggs. 1 p.
- 1,c.[Re: Silk-worm egg sendings.] 1886. C. V. Riley, Ent. 1 p.
2. (Silk-culture circular, No.2) Oct. 15, 1884. 6 p.
3. (Silk-culture circular, No.3) Oct. 1, 1884. Blank for names of persons interested in silk culture.
4. [Application for instructions in silk culture.] 188- Geo. B. Loring, Comr. Agr. 1 p.
5. (Silk-culture circular, No.5) Signed: Geo. B. Loring, Comr. Agr. 1 p.
6. (Silk-culture circular, No.6) 1885. Signed: Geo. B. Loring, Comr. Agr. 1 p.
7. (Silk culture circular, No.7) 188- Signed: Geo. B. Loring, Comr. Agr. 1 p.
8. [Stations for reeling raw silk.] Apr.22, 1885. 1 p.
9. [Re: Silk-worm eggs.] May 1, 1885. 1 p.
10. [Re: Entomological documents.] 188- 4 p.
11. [Re: Exhausted publications.] 188- Signed: C. V. Riley, Ent. 4 p.
12. [Re: Mailing "Manual on silk-worm".] 188- Signed: C. V. Riley, Ent. 1 p.
13. [Re: Exhausted "Manual on silk-worm".] 188- Signed: C. V. Riley, Ent. 1 p.
14. [Re: Silk-worm moths and eggs.] 1885. Signed: C. V. Riley, Ent. 1 p.
15. [Re: Silk-worm moths free from disease.] 188- Signed: C.V. Riley, Ent. 1 p.
16. [Re: Cicada septendecim and C. tredecim.] June 1, 1885. Signed: C. V. Riley, Ent. 1 p.
17. [Re: Receipt of silk-worm eggs.] 1885. Signed: C. V. Riley, Ent. 1 p.
18. [Re: Establishment of branch of economic ornithology.] July 1, 1885. Signed: C. V. Riley, Ent. 1 p.
19. [Re: Distribution of Ed. 6 of Special report No. 11.] 188- Signed: C. V. Riley, Ent. 1 p.
20. Economic ornithology. July 1, 1885. Signed: Dr. C. Hart Merriam, Ornithological agent. 4 p.
21. [Re: Purchase of silk-worm eggs.] 188- Signed: C. V. Riley, Ent. 1 p.
22. [Re: Bee culture.] 188- Signed: C. V. Riley, Ent. 1 p.
24. Circular to the keepers of lights. 1886. Signed: Dr. C. Hart Merriam, Ornithological agent. 3 p.
25. [Re: Answers to silk-worm questions.] Mar. 15, 1886. Signed: C. V. Riley, 1 p. (Suppressed.)
[Re: Reporting on silk-worm eggs.] 1886. Signed: C. V. Riley, Ent. 1 p.
26. [Re: Reeling silk from the cocoon.] July 8, 1886. Signed: Norman J. Colman, Comr. Agr. 1 p.
27. [Re: Geographic distribution and migration of North American birds for 1886.] 1886. Signed: Dr. C. Hart Merriam, Ornithological agent. 3 p.
[Re: Distribution of silk-worm eggs.] 188-. Signed: Comr. 1 p. [Unnumbered]
[Re: "Directions for sending insects".] 188- Signed: B. Pickman Mann. [Unnumbered]

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BUREAU OF ENTOMOLOGY

1-173

Circulars (second series)

1891-1913

1. Condensed information concerning some of the more important insecticides. 7 p. 1891.
2. The hop plant-louse (*Phorodon humuli* [Schr.]) and the remedies to be used against it. 7 p., illus. 1891.
3. Howard, L.O. An important enemy to fruit trees. The San José scale [*Aspidiotus perniciosus* Comst.]; its appearance in the eastern United States; measures to be taken to prevent its spread and to destroy it. 10 p., illus. 1893.
4. Howard, L. O. The army worm. (*Leucania unipuncta* Haw.) 5 p., illus. 1894.
5. Howard, L. O. The carpet beetle, or "buffalo moth." (*Anthrenus scrophulariae* L.) 4 p., illus. 1894. (Rev. 1908.)
6. Howard, L.O. The Mexican cotton-boll weevil. (*Anthonomus grandis* Boh.) 5 p., illus. 1895. (Spanish edition also, 6 p., illus.)
7. Marlatt, C.L. The pear tree psylla. (*Psylla pyricola* Foerst.) 8 p., illus. 1895.
8. Marlatt, C.L. The imported elm leaf-beetle. *Galerucella luteola* Mill. (*Galeruca xanthomelaena* Schrank.) 4 p., illus. 1895. (Rev. 1908, 6 p.)
9. Coquillett, D.W. Cankerworms [*Paleacrita vernata* Peck and (*Anisopteryx*) *Alsophila pometaria* Harr.]. 4 p., illus. 1895.
10. Howard, L.O. The harlequin cabbage bug, or calico bug. (*Murgantia histrionica* Hahn.) 2 p., illus. 1895. (Superseded by No. 103.)
11. Chittenden, F.H. The rose-chaffer [*Macrodactylus subspinosus* Fab.]. 4 p., illus. 1895. Rev. 1909.
12. Marlatt, C.L. The Hessian fly. (*Cecidomyia destructor* Say.) 4 p. 1895. Rev. 1900. (Superseded by No. 70.)
13. Howard, L. O. Mosquitoes and fleas. 4 p., 1896. Rev. 1897. (Superseded in part by No. 108.)
14. Howard, L.O. The Mexican cotton-boll weevil. (*Anthonomus grandis* Boh.) 8 p., illus. 1896. (Revision of No. 6. Spanish edition also, 8 p., illus.)
15. Howard, L.O. General work against insects which defoliate shade trees in cities and towns. 4 p. 1896.
16. Howard, L.O. The larger corn stalk-borer. (*Diatraea saccharalis* Fab.) 3 p., illus. 1896.
17. Marlatt, C.L. The peach-tree borer. (*Sannina exitiosa* Say.) 4 p., illus. 1896. (Superseded by No. 54.)
18. Howard, L. O. The Mexican cotton-boll weevil. (*Anthonomus grandis* Boh.) 8 p., illus. 1897. (Revision of No. 14. Spanish ed., 10 p.; illus. German ed., 11 p.; illus.)

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Circulars (second series) (Cont'd.)

19. Marlatt, C.L. The clover mite. (*Bryobia pratensis* Garman.) 4 p., illus. 1897. Ed. 2, 1897.
20. Marlatt, C.L. The woolly aphis of the apple. (*Schizoneura lanigera* Hausm.) 6 p., illus. 1897. Rev. 1908.
21. Chittenden, F.H. The strawberry weevil. (*Anthonomus signatus* Say.) 7 p., illus. 1897. Rev. 1908, 10 p., illus.
22. Schwarz, E.A. The periodical cicada [*Tibicina septendecim* L.] in 1897, 4 p. 1897.
23. Marlatt, C.L. The buffalo tree-hopper. (*Ceresa bubalus* Fab.) 4 p., illus. 1897.
24. Chittenden, F.H. The two-lined chestnut borer. (*Agrilus bilineatus* Weber.) 8 p., illus. 1897. Rev. 1909, 7 p., illus.
25. Marlatt, C.L. The ox warble. (*Hypoderma lineata* Villers.) 10 p., illus. 1897.
26. Marlatt, C.L. The pear slug. (*Eriocampoides limacina* Retzius.) 7 p., illus. 1897.
27. Howard, L.O. The Mexican cotton-boll weevil [*Anthonomus grandis* Boh.] in 1897. 7 p. 1897.
28. Howard, L. O. The box-elder plant-bug. (*Leptocoris trivittatus* Say.) 3 p., illus. 1898.
29. Chittenden, F.H. The fruit-tree bark-beetle. (*Scolytus rugulosus* Ratz.) 8 p., illus. 1898. Rev. 1903.
30. Schwarz, E.A. The periodical cicada [*Tibicina septendecim* L.] in 1898. 3 p. 1898.
31. Chittenden, F.H. The striped cucumber beetle. (*Diabrotica vittata* Fab.) 7 p., illus. 1898. Rev. 1903, 6 p., illus.; 2d rev. 1909, 8 p., illus.
32. Chittenden, F.H. The larger apple-tree borers. 12 p., illus. 1898. Rev. 1902. 12 p., illus.; 2d rev., 1905, 11 p., illus.; 3d rev., 1907, 11 p., illus.
33. Howard, L.O. Remedial work against the Mexican cotton-boll weevil [*Anthonomus grandis* Boh.]. 6 p. 1898. (Supplementary to Circulars 18 and 27.)
34. Marlatt, C.L. House ants. (*Monomorium pharaonis* et al.) 4 p., illus. 1898. Rev. 1907, 4 p., illus.
35. Howard, L.O. House flies. (*Musca domestica* et al.) 8 p., illus. 1898. (Superseded by no. 71.)
36. Marlatt, C.L. The true clothes moth. (*Tinea pellionella* et al.) 8 p., illus. 1898. Rev. 1908.
37. Woods, A.F., and Dorsett, P.H. The use of hydrocyanic acid gas for fumigating greenhouses and cold frames. 10 p., illus. 1898. Corrected print 1899. Rev. 1903, 10 p., illus.; 1908, 11 p., illus.
38. Chittenden, F.H. The squash-vine borer. (*Melittia satyriniformis* Hbn.) 6 p., illus. 1899. Rev. 1903, 6 p., illus., 1908, 6 p., illus.
39. Chittenden, F.H. The common squash bug. (*Anasa tristis* DeG.) 5 p., illus. 1899. Rev. 1905, 4 p., illus.; 2d rev., 1908, 6 p., illus.
40. Howard, L.O. How to distinguish the different mosquitoes of North America. [Includes: Synoptic tables of the North American mosquito, by D.W. Coquillett.] 7 p., illus. 1900. 2d print, 1900, 8 p., illus.

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Circulars (second series)(Cont'd.)

41. Howard, L.O. Regulations of foreign governments regarding importation of American plants, trees, and fruits. 4 p. 1900.
42. Marlatt, C.L. How to control the San Jose scale [*Aspidiotus perniciosus* Comst.]. 6 p. 1900. Rev. 1902, 6 p.; 1903, 7 p.; 1906, 8 p.; 1909, 7 p.
43. Chittenden, F.H. The destructive green pea louse. (*Nectarophora destructor* Johns.) 8 p., illus. 1901. 2d ed. entitled "The pea aphid. (*Macrosiphum pisi* Kalt.)," 1909, 10 p., illus.
44. Hunter, W.D. The periodical cicada [*Tibicina septendecim* L.] in 1902.
45. Marlatt, C.L. A new nomenclature for the broods of the periodical cicada [*Tibicina septendecim* L.]. 8 p. 1902.
46. Howard, L.O. Hydrocyanic-acid gas against household insects. 6 p. 1902. (Rev. by C.L. Marlatt, 1907, 7 p.)
47. Marlatt, C.L. The bedbug. (*Cimex lectularius* Linn.) 8 p., illus. 1902. Rev. 1907.
48. Marlatt, C.L. The house centipede. (*Scutigera forceps* Raf.) 4 p., illus. 1902.
49. Marlatt, C.L. The silver fish. (*Lepisma saccharina* Linn.) 4 p., illus. 1902.
50. Marlatt, C. L. The white ant. (*Termes flavipes* Koll.) 8 p., illus. 1902. Rev. 1908.
51. Marlatt, C.L. Cockroaches. 15 p., illus. 1902. Rev. 1908, 14 p., illus.
52. Marlatt, C.L. The lime, sulphur, and salt wash. 8 p. 1903. 2d. ed. 1904, 8 p.
53. Simpson, C.B. The yellow-winged locust. (*Camula pellucida* Scudd.) 3 p., illus. 1903.
54. Marlatt, C.L. The peach-tree borer. (*Sannina exitiosa* Say.) 6 p., illus. 1903.
55. Hopkins, A.D. Powder-post injury to seasoned wood products. 5 p., illus. 1903.
56. Hunter, W.D. The most important step in the cultural system of controlling the boll weevil [*Anthonomus grandis* Boh.]. 7 p. 1904. (Superseded by No. 95.)
57. Morrill, A.W. The greenhouse white fly. (*Aleyrodes vaporariorum* Westw.) 9 p., illus. 1905.
58. Marlatt, C.L. Report on the gypsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.], 1904. 12 p., illus. 1905.
59. Chittenden, F.H. The corn root-worms [*Diabrotica 12-punctata* L. and *D. longicornis* Say]. 8 p., illus. 1905.
60. Chittenden, F.H. The imported cabbage worm. (*Pontia rapae* Linn.) 8 p., illus. 1905.
61. Burke, H.E. Black check in western hemlock. 10 p., illus. 1905.
62. Chittenden, F.H. The cabbage hair-worm [*Mermis albicans* Diesing]. 6 p., illus. 1905. Rev. 1908, 6 p., illus.

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Circulars (second series) (Cont'd.)

63. Chittenden, F.H. Root-maggots and how to control them. 7 p., illus. 1905. 2d ed., 1906, 7 p., illus.
64. Sanders, J.G. The cottony maple scale. (*Pulvinaria innumerabilis* Rathvon.) 6 p., illus. 1905.
65. Titus, E.S.G. The cotton red spider. (*Tetranychus gloveri* Bks.) 5 p., illus. 1905.
66. Webster, F.M. The joint-worm. (*Isosoma tritici* Fitch.) 5 p., illus. 1905. Rev. 1908, 7 p., illus.
67. Webster, F.M. The clover root-borer. (*Hylastinus obscurus* Marsham.) 5 p., illus. 1905.
68. Hooker, W.A. The tobacco thrips and remedies to prevent "white veins" in wrapper tobacco. (*Euthrips nicotianae* Hinds.) 5 p., illus. 1906.
69. Webster, F.M. Some insects affecting the production of red clover seed. 9 p., illus. 1906.
70. Webster, F.M. The Hessian fly. (*Mayetiola* [*Cecidomyia*] *destructor* Say.) 16 p., illus. 1906.
71. Howard, L.O. House flies. (*Musca domestica* et al.) 9 p. illus. 1906. Rev. of Circ. No. 35. Rev. 1906, 10 p., illus.
72. Dyar, H.G. Key to the known larvae of the mosquitoes of the United States. 6 p., illus. 1906.
73. Johnson, Fred, and Girault, A.A. The plum curculio. (*Conotrachelus nenuphar* Herbst.) 10 p., illus. 1906.
74. Marlatt, C.L. The periodical cicada in 1906. (*Tibicen septendecim* L.) 5 p., illus. 1906.
75. Burgess, A.F. Requirements to be complied with by nurserymen or others who make interstate shipments of nursery stock. 6 p., 1906. Rev. 1908, 7 p.; 2d rev., 1909, 9 p.
76. Colcord, Mabel. List of publications of the Bureau of Entomology. 21 p. 1906. Rev. 1908, 28 p.; 1909, 29 p.; 1910, 32 p.
77. Chittenden, F.H. Harvest mites, or "chiggers." 6 p., illus. 1906.
78. Webster, F.M. The slender seed-corn ground-beetle. (*Clivina impressifrons* Lec.) 5 p., illus. 1906.
79. Phillips, E.F. The brood diseases of bees. 5 p. 1906.
80. Chittenden, F.H. The melon aphis. (*Aphis gossypii* Glov.) 16 p., illus. 1906.
81. Quaintance, A.L. The aphides affecting the apple. 10 p., illus. 1907.
82. Hopkins, A.D. Pinhole injury to girdled cypress in the South Atlantic and Gulf States. 4 p., illus. 1907.
83. Hopkins, A.D. The locust borer [*Cyllene robiniae* Forst.] and methods for its control. 8 p., illus. 1907.
84. Webster, F.M. The grasshopper problem and alfalfa culture. 10 p., illus. 1907.
85. Webster, F.M. The spring grain-aphis, (*Toxoptera graminum* Rond.) 7 p., illus. 1907. (See also No. 93.)
86. The corn leaf-aphis [*Aphis maidis* Fitch] and corn root-aphis [*Aphis maidi-radici* Forbes]. 13 p., illus. 1907.

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Circulars (second series) (Cont'd.)

87. Chittenden, F.H. The Colorado potato beetle. (*Leptinotarsa decemlineata* Say.) 15 p., illus. 1907.
88. Sanders, J.G. The terrapin scale. (*Eulecanium nigrofasciatum* Pergande.) 4 p., illus. 1907.
89. Marlatt, C.L. The periodical cicada in 1907. (*Tibicen septendecim* L., race *tredecim* Walsh-Riley.) 4 p., illus. 1907.
90. Hopkins, A.D. The white-pine weevil [*Pissodes strobi* Peck]. 8 p., illus. 1907.
91. Hunter, W.D. Note on the occurrence of the North American fever tick [*Boophilus* (*Margaropus*) *annulatus* Say] on sheep. 3 p. 1907.
92. Banks, Nathan. Mites and lice on poultry. 8 p., illus. 1907.
93. Webster, F.M. The spring grain-aphis or so-called "green bug." (*Toxoptera graminum* Rond.) 18 p., illus. 1907. Rev. 1909, 22 p., illus.
94. White, G.F. The cause of American foul brood [*Bacillus larvae* White]. 4 p. 1907.
95. Hunter, W.D. The most important step in the control of the boll weevil [*Anthonomus grandis* Boh.]. 8 p. 1907. Rev. of Circ. No. 56. Rev. 1908, 8 p. French ed., 1909, 11 p.
96. Howard, L.O., and Chittenden, F.H. The catalpa sphinx. (*Ceratoma catalpae* Bdv.) 7 p., illus., illus. 1907.
97. Howard, L.O., and Chittenden, F.H. The bagworm. (*Thyridopteryx ephemeraeformis* Haw.) 10 p., illus. 1908.
98. Quaintance, A.L. The apple-tree tent caterpillar. (*Malacosoma americana* Fab.) 8 p., illus. 1908.
99. Chittenden, F.H. The nut weevils. 15 p., illus. 1908. (Reprinted from Yearbook of the Department of Agriculture for 1904.)
100. Currie, R.P., and Caudell, A.N. An index to Circulars 1 to 100 of the Bureau of Entomology. 49 p. 1911.
101. Quaintance, A.L. The apple maggot or "railroad worm." (*Rhagoletis* [*Trypeta*] *pomonella* Walsh.) 12 p., illus. 1908.
102. Chittenden, F.H. The asparagus beetles [*Crioceris* spp.]. 12 p., illus. 1908.
103. Chittenden, F.H. The harlequin cabbage bug. (*Margantia histrionica* Hahn.) 10 p., illus. 1908.
104. Chittenden, F.H. The common red spider. (*Tetranychus bimaculatus* Harvey.) 11 p., illus. 1909.
105. Chittenden, F.H. The rose slugs. 13 p., illus. 1908.
106. Webster, F.M. The wheat strawworm. (*Isosoma grande* Riley.) 15 p., illus. 1909.
107. Hunter, W.D. What can be done in destroying the cotton boll weevil [*Anthonomus grandis* Boh.] during the winter. 4 p. 1909.
108. Howard, L.O. House fleas. 4 p., illus. 1909.
109. Howard, L.O., and Chittenden, F.H. The leopard moth (*Zeuzera pyrina* Fab.) 8 p., illus. 1909.
110. Howard, L.O., and Chittenden, F.H. The green-striped maple worm. (*Anisota rubicunda* Fab.) 7 p., illus. 1909.

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Circulars (second series) (Cont'd.)

111. Morrill, A.W., and Yothers, W.W. Preparations for winter fumigation for the citrus white fly [*Aleyrodes citri* Riley and Howard]. 12 p., illus. 1909.
112. Chittenden, F.H. Control of the Mediterranean flour moth [*Ephestia kuehniella* Zell.] by hydrocyanic-acid gas fumigation. 22 p., illus. 1910.
113. Webster, F.M. The chinch bug. (*Blissus leucopterus* Say.) 27 p., illus. 1909.
114. Sanders, J.G. The Euonymus scale. (*Chionaspis euonymi* Comstock.) 5 p., illus. 1909.
115. Marlatt, C.L. The horn fly. (*Haematobia serrata* Rob.-Desv.) 13 p., illus. 1910.
116. Ainslie, G.G. The larger corn stalk-borer. (*Diatraea saccharalis* Fab.) 8 p., illus. 1910.
117. Webster, F.M., and Reeves, G.I. The western grass-stem sawfly. (*Cephus occidentalis* Riley and Marlatt.) 6 p., illus. 1910.
118. Webster, F.M. A predaceous mite proves noxious to man. (*Pediculoides ventricosus* Newport.) 24 p., illus. 1910.
119. Webster, F.M. The clover root-borer. (*Hylastinus obscurus* Marsham.) 5 p., illus. 1910.
120. Scott, W.M., and Quaintance, A.L. Control of the brown rot and plum curculio [*Conotrachelus nenuphar* Hbst.] of peaches. 7 p. 1910.
121. Quaintance, A.L., and Sasser, E.R. The oyster-shell scale and the scurvy scale. (*Lepidosaphes ulmi* L. and *Chionaspis furfura* Fitch.) 15 p., illus. 1910.
122. Hunter, W.D. The status of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1909. 12 p., illus. 1910.
123. Morgan, A.C. Methods of controlling tobacco insects. 17 p., illus. 1910.
124. Quaintance, A.L. The San Jose scale [*Aspidiotus perniciosus* Comst.] and its control. 18 p., illus. 1910.
125. Hopkins, A.D. Insects which kill forest trees: Character and extent of their depredations and methods of control. 9 p. 1910.
126. Hopkins, A.D. Insect injuries to the the wood of living trees. 4 p. 1910.
127. Hopkins, A.D. Insect injuries to the wood of dying and dead trees. 3 p. 1910.
128. Hopkins, A.D. Insects injurious to forest products. 9 p. 1910.
129. Hopkins, A.D. Insects in their relation to the reduction of future supplies of timber, and general principles of control. 10 p. 1910.
130. Chittenden, F.H. The oak pruner. (*Elaphidion villosus* Fab.) 7 p., illus. 1910.
131. Foster, S.W., and Jones, P.R. How to control the pear thrips. (*Euthrips pyri* Daniel.) 24 p., illus. 1911.
132. Marlatt, C.L. The periodical cicada in 1911. (*Tibicen septendecim* L.) 6 p., illus. 1911.
133. Wildermuth, V.L. The alfalfa caterpillar. (*Eriynis eurytheme* Boisd.) 14 p., illus. 1911.

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Circulars (second series) (Cont'd.)

134. Snyder, T.E. Damage to telephone and telegraph poles by wood-boring insects. 6 p., illus. 1911.
135. Chittenden, F.H. The asparagus miner. (*Agromyza simplex* Loew.) 5 p., illus. 1911.
136. Bishopp, F.C. The distribution of the Rocky Mountain spotted-fever tick. (*Dermacentor venustus* Banks.) 4 p., illus. 1911.
137. Webster, F.M. The alfalfa weevil. (*Phytonomus marinus* Fab.) 9 p., illus. 1911.
138. Phillips, E.F. The occurrence of bee diseases in the United States. (Preliminary report.) 25 p. 1911.
139. Barber, T.C. Damage to sugar cane in Louisiana by the sugar-cane borer. (*Diatraea saccharalis* Fab.) 12 p. 1911.
140. Bishopp, F.C. An annotated bibliography of the Mexican cotton boll weevil. (*Anthonomus grandis* Boh.) 30 p. 1911.
141. Marlatt, C.L. The mango weevil. (*Cryptorhynchus mangiferae* Fab.) 3 p., illus. 1911.
142. Popenoe, C.H. The Indian-meal moth [*Plodia interpunctella* Hbn.] and "weevil-cut" peanuts. 6 p., illus. 1911.
143. Hopkins, A.D. Insect damage to standing timber in the national parks. 10 p. 1912.
144. Hopkins, A.D. The dying hickory trees-- cause and remedy. 5 p., illus. 1912.
145. Chittenden, F.H. The larger canna leaf-roller. (*Calpodes ethlius* Cram.) 10 p., illus. 1912.
146. Hunter, W.D. The movement of the Mexican cotton-boll weevil [*Anthonomus grandis* Boh.] in 1911. 4 p., illus. 1912.
147. Webster, F.M. The alfalfa gall midge. (*Asphondylia miki* Wachtl.) 4 p., illus. 1912.
148. Hunter, W.D. Two destructive Texas ants [*Atta texana* Buckley and *Pogonomyrmex barbatus molefasciens* Buckley]. 7 p. 1912.
149. Hunter, W.D. The cotton stainer. (*Dysdercus suturellus* H.-Schf.) 5 p., illus. 1912.
150. McGregor, E.A. The red spider on cotton. (*Tetranychus bimaculatus* Harvey.) 13 p., illus. 1912.
151. Russell, H.M. The greenhouse thrips. (*Heliothrips haemorrhoidalis* Bouché.) 9 p., illus. 1912.
152. Tucker, E.S. The rice water-weevil and methods for its control. (*Lissorhoptrus simplex* Say.) 20 p., illus. 1912.
153. Hunter, W.D. The cotton worm or cotton caterpillar. (*Alabama argillacea* Hbn.) 10 p. 1912.
154. Quaintance, A.L. The leaf blister mite. (*Eriophyes pyri* Pagenstecher.) 6 p., illus. 1912.
155. Popenoe, C.H. Insects injurious to mushrooms. 10 p., illus. 1912.
156. Snyder, T.E. Insect damage to mine props and methods of preventing the injury. 4 p. 1912.
157. White, G.F. The cause of European foul brood. 15 p., illus. 1912.
158. Webster, F.M. The clover mite. (*Bryobia pratensis* Garman.) 5 p., illus. 1912.

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Circulars (second series) (Cont'd.)

159. Hopkins, A.D. Damage to the wood of fire-killed Douglas fir, and methods of preventing losses, in western Washington and Oregon. 4 p. 1912.
160. Quaintance, A.L. The Mediterranean fruit fly. (*Ceratitis capitata* Wiedemann.) 25 p., illus. 1912.
161. Casteel, D.B. The manipulation of the wax scales of the honey bee. 13 p., illus. 1912.
162. Chittenden, F.H. The potato-tuber moth. (*Phthorimaea operculella* Zell.) 5 p., illus. 1912.
163. Howard, L.O., and Popenoe, C.H. Hydrocyanic-acid gas against household insects. 8 p. 1912.
164. Fiske, W.F. The gipsy moth [*Porthetria dispar* L.] as a forest insect, with suggestions as to its control. 20 p. 1913.
165. Holloway, T.E. Insects liable to dissemination in shipments of sugar cane. 8 p. 1912.
166. Parker, W.B. Flour paste as a control for red spiders and as a spreader for contact insecticides. 5 p., illus. 1913.
167. Hunter, W.D., and Pierce, W.D. The movement of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1912. 3 p., illus. 1912.
168. Yothers, W.W. Spraying for white flies in Florida. 8 p. 1913.
169. White, G.F. Sacbrood, a disease of bees. 5 p. 1913.
170. Bishopp, F.C. The fowl tick. (*Argas miniatus* Koch.) 5 p., illus. 1913.
171. Holloway, T.E. Field observations on sugar-cane insects in the United States in 1912. 8 p. 1913.
172. McGregor, E.A. The red spider on cotton. (*Tetranychus bimaculatus* Harvey.) 22 p., illus. 1913.
173. Morgan, A.C., and Parman, D.C. Arsenate of lead as an insecticide against the tobacco hornworms. 10 p. 1913.

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Bibliography of the More Important Contributions to
American Economic Entomology

- I. The more important writings of Benjamin Dann Walsh. By Samuel Henshaw. 49 p. 1889.
- II. The more important joint writings of B. D. Walsh and C. V. Riley. By Samuel Henshaw. p. 51-96. 1889.
- III. The more important writings of Charles Valentine Riley. By Samuel Henshaw. p. 97-371. 1889.
- IV. The more important writings of Government and State entomologists and of other contributors to the literature of American economic entomology. A-K. By Samuel Henshaw. 167 p. 1895.
- V. The more important writings of Government and State entomologists and of other contributors to the literature of American economic entomology. L-Z. By Samuel Henshaw. 179 p. 1896.
- VI. The more important writings published between June 30, 1888, and December 30, 1896. By Nathan Banks. 273 p. 1898.
- VII. The more important writings published between December 31, 1896, and January 1, 1900. By Nathan Banks. 113 p. 1901.
- VIII. The more important writings published between December 31, 1899, and January 1, 1905. By Nathan Banks. 132 p. 1905.

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INSECT PEST SURVEY

Insect pest survey bulletin, a monthly review of entomological conditions throughout the United States. (Mimeographed.)

- v. 1, no. 1-7 and index, May-Nov., 1921. 285, 31 p.
- v. 2, no. 1-8 and index, Apr.-Nov., 1922. 316 p.
- v. 3, no. 1-8 and index, Mar.-Oct., 1923. 377 p.
- v. 4, no. 1-8 and index, Apr.-Nov., 1924. 367 p.
- v. 5, no. 1-8 and index, Apr.-Nov., 1925. 441 p.
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- Vol. 1. Nos. 1-12, July, 1888-June, 1889, title-page and index.
388 p.
2. Nos. 1-12, July 1889-June, 1890, title-page and index.
418 p.
3. Nos. 1-12, August, 1890-August, 1891, title-page and
index. 519 p.
4. Nos. 1-12, October, 1891-August, 1892, title-page and
index. 441 p.
5. Nos. 1-5, September, 1892-July, 1893, title-page and
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(Mimeographed, unless otherwise specified)

1. Yothers, W. W. Spraying scheme for the control of insect pests on citrus trees in Florida. 2 p. Feb. 2, 1915.
2. News letter No. 10. 8 p. Jan.-Feb., 1915. (Printed.)
3. Chittenden, F. H. Remedies for weevils injurious to peas, beans and cowpeas. 1 p. Sept. 19, 1913.
4. Methods of collecting and preserving May-beetles (Phyllophaga). 1 p.
5. Hunter, W. D., and Pierce, W. D. The movement of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1914. 2 p. 1915. (Printed.)
6. Bulletins, New series. [Publications of the U. S. Department of Agriculture, Bureau of Entomology.] 4 p.
7. Chittenden, F. H. Soda salts as a substitute for potash salts in hydrocyanic acid gas fumigation. 1 p. Apr. 27, 1915. (Printed.)
8. News letter No. 11. 10 p. Mar., 1915. (Printed.)
9. News letter No. 12. 4 p. Apr., 1915. (Printed.)
10. News letter No. 13. 5 p. May, 1915. (Printed.)
11. News letter No. 14. 8 p. June, 1915. (Printed.)
12. News letter No. 15. 6 p. July, 1915. (Printed.)
13. Chittenden, F. H. Investigations on insects injurious to truck crops. 1 p. (Printed.)
14. News letter No. 16. 3 p. Aug., 1915. (Printed.)
15. News letter No. 17. 6 p. Sept., 1915.
16. News letter No. 18. 6 p. Oct., 1915.
17. Hopkins, A. D. Information on the habits of the hickory barkbeetle [*Scolytus quadrispinosus* Say] and methods of controlling it. 2 p. Nov. 18, 1915.
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19. Hunter, W. D., and Pierce, W. D. The spread of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1915. 2 p. Jan. 10, 1916. (Printed.)
20. News letter no. 20. 8 p. Dec., 1915.
21. News letter No. 21. 4 p. Jan., 1916.
22. Marlatt, C. L. Destruction of house ants. Mar. 1, 1916.
23. News letter No. 22. 7 p. Feb., 1916.
24. Publications of the U. S. Department of Agriculture, Bureau of Entomology. Feb., 1916. (Frequent revisions.)
25. Howard, L. O. Instructions for the use of service certificates. May 1, 1916.
26. Notice to field men.
27. Hopkins, A. D. Locust borer [*Cyrtene robiniae* Forst.] and its control. May 15, 1916.
28. The corn billbugs. (Postcard.)
29. Hopkins, A. D. Brief information on aphids affecting shade and ornamental shrubs and how to control them. Mar. 23, 1916. (Forest Ent. Brief 7.)

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30. Hopkins, A. D. Brief information on prevention of insect injuries to crude forest products. May 27, 1916. (Forest Ent. Brief 6.)
31. Hopkins, A. D. Brief information on bronze birch borer [*Agrilus anxius* Gory] and its control. Mar. 27, 1916. (Forest Ent. Brief 5.)
32. Hopkins, A. D. Brief information on insect damage to manufactured unseasoned forest products and its prevention. Mar. 27, 1916. (Forest Ent. Brief 4.)
33. Form 1. (Scientific employees.) Data regarding scientific employees in the Bureau of Entomology.
34. Form 2. (Scientific employees.)
35. News letter No. 23. 6 p. Mar., 1916.
36. Hopkins, A. D. Kerosene emulsion. Its preparation and use. Mar. 3, 1916. (Forest Ent. Brief 3.)
37. Hopkins, A. D. Scale insects on shade trees and hardy ornamentals and remedies employed against them. Apr. 3, 1916. (Forest Ent. Brief 8.)
38. Hopkins, A. D. Brief information on damage by termites to woodwork and floorings in buildings. Apr. 11, 1916. (Forest Ent. Brief 9.)
39. Hopkins, A. D. Brief information on insect damage to rough and finished seasoned forest products in yards, storehouses and use, and its control. Apr. 11, 1916. (Forest Ent. Brief 10.)
40. Hopkins, A. D. Brief information on the fall canker worm [*Alsophila pometaria* Harr.] and its control on forest and shade trees. Jan. 8, 1916. (Forest Ent. Brief 16.)
41. Hopkins, A. D. Brief information on scale insect remedies. Spraying substances. Apr. 11, 1916. (Forest Ent. Brief 17.)
42. Publications pertaining to beekeeping.
43. Hopkins, A. D. Brief information on cottony maple scale [*Pulvinaria innumerabilis* Rath.] and its control. Apr. 18, 1916. (Forest Ent. Brief 11.)
44. Hopkins, A. D. Brief information on pine leaf scale [*Chionaspis pinifoliae* Fitch] and its control. Apr. 18, 1916. (Forest Ent. Brief 12.)
45. Hopkins, A. D. Brief information on poplar borer [*Saperda calcarata* Say] and its control. Apr. 18, 1916. (Forest Ent. Brief 13.)
46. Hopkins, A. D. Brief information on rose chafer [*Macrodactylus subspinosus* Fab.] and its control. Apr. 18, 1916. (Forest Ent. Brief 18.)
47. News letter No. 24. 13 p. Apr., 1916.
48. Hopkins, A. D. Brief information on the pine bark louse [*Chermes pinicorticis* Fitch] or red spruce twig gall-louse and methods of control. May 12, 1916. (Forest Ent. Brief 20.)
49. Hopkins, A. D. Brief information on rose slugs and their control. May 12, 1916. (Forest Ent. Brief 14.)
50. Hopkins, A. D. Brief information on red spider [*Tetranychus telarius* L.] and its control. May 12, 1916. (Forest Ent. Brief 15.)
51. Hopkins, A. D. Brief information on hickory gall insects and their control. May 12, 1916. (Forest Ent. Brief 19.)
52. Hopkins, A. D. Brief information on the white pine weevil [*Pissodes strobi* Peck] and its control. May 11, 1916. (Forest Ent. Brief 21.)

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53. Work of the insect that is killing the hickories. 4 p., illus. May, 1916. (Printed.)
54. Howard, L. O. Instructions for preparing the annual inventory. June 1, 1916.
55. List of expendable property.
56. News letter No. 25. 8 p. May, 1916.
57. Hopkins, A.D. Brief I. The dying hickory trees on Long Island, N.Y. June 1, 1916.
58. Hopkins, A. D. Brief II. The dying hickory trees on Long Island, N. Y., caused by the hickory bark beetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
59. Hopkins, A. D. Brief III. The dying hickory trees on Long Island, N.Y., caused by the hickory bark beetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
60. Hopkins, A. D. Brief IV. The dying hickory trees on Long Island, N.Y., caused by the hickory barkbeetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
61. Hopkins, A. D. Brief V. The dying hickory trees on Long Island, N.Y., caused by the hickory barkbeetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
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63. Hopkins, A. D. Brief VII. The dying hickory trees on Long Island, N. Y., caused by the hickory barkbeetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
64. Hopkins, A. D. Brief VIII. The dying hickory trees on Long Island, N.Y., caused by the hickory bark beetle [*Scolytus quadrispinosus* Say]. June 1, 1916.
65. Map showing areas quarantined for the gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.], 1916. (Printed.)
66. Map showing areas quarantined for the gipsy moth [*Porthetria dispar* L.] and the brown-tail moth [*Euproctis chrysorrhoea* L.], 1916. (Printed.)
67. Hopkins, A. D. Brief A. The dying hickory and oak trees on Long Island, N. Y. June 20, 1916. Investigations.
68. Hopkins, A. D. Brief B. The dying hickory and oak trees on Long Island, N.Y. June 20, 1916. Objects and results of investigations.
69. News letter No. 26. 12 p. June, 1916.
70. Hopkins, A. D. Brief D. On the dying oak and hickory trees on Long Island, N.Y. June 20, 1916. Objects and results of investigations.
71. Hopkins, A. D. Brief II. On the dying oak trees on Long Island, N.Y., caused by the two-lined chestnut borer [*Agrilus bilineatus* Web.]. Remedy. June 20, 1916
72. Hopkins, A.D. On the dying oak trees on Long Island, N.Y. June 20, 1916. Brief I. Cause.
73. Hopkins, A. D. The dying hickory and oak trees on Long Island, N.Y. June 28, 1916. Cause and remedy.
74. Directions for making grasshopper poison. (Postcard, printed.)
75. News letter No. 27. 11 p. July, 1916.
76. Introduction of the nose fly [*Gastrophilus haemorrhoidalis* L.] into this country from Europe. Aug. 10, 1916.

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77. News letter No. 28. 9 p. Aug., 1916.
78. News letter No. 29. 7 p. Sept., 1916.
79. List of papers by Dr. C. L. Marlatt omitted from the "Bibliography of American economic entomology," Part VIII. (1900-1904.) Revised.
80. News letter No. 30. 9 p. Oct., 1916.
81. Hopkins, A. D. The white marked tussock moth [*Hemerocampa leucostigma* S. & A.] and its control. Oct. 24, 1916. (Forest Ent. Brief 37.)
82. News letter No. 31. 8 p. Nov., 1916.
83. Hopkins, A. D. Directions for packing and shipping of specimens of insects and their work. Nov. 21, 1916. (Forest Ent. Brief 38.)
84. Davis, J. J. Controlling grubs of the southern green June beetle [*Cotinis nitida* L.]. 1916.
85. Map showing spread of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.] from 1892 to 1916. Issued Dec. 28, 1916. (Printed.)
86. Hunter, W. D., and Pierce, W. D. The spread of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1916. Issued Dec. 14, 1916. (Printed.)
87. News letter No. 32. 9 p. Dec., 1916.
88. News letter No. 33. 15 p. Jan., 1917.
89. Townsend, C. H. T. Bots of American large game animals. Feb. 15, 1917.
90. News letter No. 34. 10 p. Feb., 1917.
91. List of American workers in Hemiptera; their projects and bibliographies. Compiled by Edmund H. Gibson.
92. Introduction of the nose fly [*Gastrophilus haemorrhoidalis* L.] into this country from Europe. Mar. 20, 1917.
93. News letter No. 35. 9 p. Mar., 1917.
94. Hopkins, A. D. The elm leaf beetle [*Galeruca xanthomelaena* Schrank] and its control. Apr. 3, 1917. (Forest Ent. Brief 39.)
95. News letter No. 36. 11 p. Apr., 1917.
96. Chittenden, F. H. Arsenate of lead as a spray for truck-crop insect pests. Apr. 9, 1917.
97. Quaintance, A. L., and Roberts, J. W. Spray to save the fruit crop from insects and diseases, 1917. 4 p., illus. (Printed.)
98. Codling moth [*Carpocapsa pomonella* L.] trap. 1917.
99. Emergency entomological service Nos. 1-14. May 1, 1917 - Aug., 1918.
100. Hopkins, A. D. How to protect rosebushes from the rose aphid [*Macrosiphum rosae* L.]. May 26, 1917. (Forest Ent. Brief 22 revised.)
101. Hopkins, A. D. Lead arsenate as a remedy for chewing insects. May, 1917. (Forest Ent. Brief 40.)
102. News letter No. 37. 12 p. May, 1917.
103. List of American workers in Hemiptera; their projects and bibliographies. Compiled by Edmund H. Gibson. July, 1917.
104. Chittenden, F. H. Arsenate of lead as a spray for insects in the vegetable garden. July 19, 1917.
105. Garden insects and their control. June 1, 1917.
106. Chittenden, F. H. The common stalk borer [*Papaipema nitela* Gn.] and its control.
107. Chinch bugs [*Blissus leucopterus* Say] in your wheat fields? Keep them out of your corn fields! Trap the chinch bug. 1917. (Poster, printed.)

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108. Warning to Kansas wheat growers. Hessian fly [*Phytopaga destructor* Say] warning. Summer of 1917. (Postcard.)
109. News letter No. 38. 9 p. June, 1917.
110. Chittenden, F. H. Nicotine sulphate for the garden. 1917.
111. News letter No. 39. 9 p. July, 1917.
112. Chittenden, F. H. Control of plant lice or aphids on potato. July 27, 1917.
113. Hessian fly [*Phytophaga destructor* Say] warning, summer of 1917. (Postcard.)
114. Quaintance, A. L. Destroy the worms in chestnuts with carbon disulphide. Aug. 15, 1917.
115. Monthly letter No. 40. 9 p. Aug., 1917.
116. Monthly letter No. 41. 9 p. Sept., 1917.
117. Monthly letter No. 42. 7 p. Oct., 1917.
118. Howard, L. O. Information in regard to silk culture. Nov. 1, 1917.
119. Preventing white grub [*Phyllophaga*] injury. (Poster, printed.)
120. Monthly letter No. 43. 11 p. Nov., 1917.
121. Map showing spread of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.] from 1892 to 1917. (Printed.)
122. Hunter, W. D., and Pierce, W. D. The spread of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1917. Dec. 31, 1917. (Printed.)
123. Monthly letter No. 44. 10 p. Dec., 1917.
124. Monthly letter No. 45. 10 p. Jan., 1918.
125. Monthly letter No. 46. 8 p. Feb., 1918.
126. Destroy grasshoppers with poisoned bran bait. 4 p., illus. Mar. 15, 1918. (Leaflet, printed.)
127. Chinch bugs [*Blissus leucopterus* Say]. 4 p., illus. Mar. 15, 1918. (Leaflet, printed.)
128. Cutworms. 2 p., illus. Mar. 15, 1918. (Leaflet, printed.)
129. Destroy grasshoppers with poisoned bran bait. (Poster, printed.)
130. Cutworms. (Poster, printed.)
131. Chinch bugs [*Blissus leucopterus* Say]. (Poster, printed.)
132. Work of the insect that is killing the oaks. [Two-lined chestnut borer, *Agrilus bilineatus* Web.] 4 p., illus. (Printed.)
133. Directions for making and applying poison syrup for Argentine ant [*Iridomyrmex humilis* Mayr] control. (Leaflet.)
- 133¹/₂. Spray schedule for apples. (Leaflet, printed.)
134. Hopkins, A. D. Locust leaf miner [*Chalepus dorsalis* Thunb.]. Aug., 1912; revised Mar., 1918. (Forest Ent. Brief 23.)
135. Chittenden, F. H. To managers of sweet potato storage houses. Mar., 1918.
136. Sweet potato weevil [*Cylas formicarius* Fab.] investigations.
137. Sweet potato weevil [*Cylas formicarius* Fab.] investigations.
138. Plan for practical control and local eradication of the sweet-potato weevil [*Cylas formicarius* Fab.]. Mar. 25, 1918.
139. Instructions to field directors. F. H. C.
140. Monthly letter No. 47-48. 12 p. March-April, 1918.
141. Spray schedule for apples (Northern States). (Poster, printed.)
142. Spray schedule for apples (Northern States). (Leaflet, printed.)

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143. Search your fruit trees for oriental peach moth [*Cydia molesta* Busck].
(Poster, printed.)
144. Potato beetles. (Poster, printed.)
145. Potato beetles. (Leaflet, printed.)
146. Cutworms. (Leaflet, printed.)
147. Cutworms. (Poster, printed.)
148. Destroy grasshoppers with poisoned bran bait. (Leaflet, printed.)
149. Destroy grasshoppers with poisoned bran bait. (Poster, printed.)
150. Monthly letter No. 49. 15 p. May, 1918.
151. Garden cutworms. Leaflet, printed.)
152. Garden cutworms. (Poster, printed.)
153. Cabbage worms. (Poster, printed.)
154. Cabbage worms. (Leaflet, printed.)
155. Spray potato fields with an arsenical in Bordeaux mixture. (Poster, printed.)
156. Spray potato fields with an arsenical in Bordeaux mixture. (Leaflet, printed.)
157. Garden plant-lice or aphids. (Poster, printed.)
158. Garden plant-lice or aphids. (Leaflet, printed.)
159. Monthly letter No. 50. 12 p. June, 1918.
160. Inquiries concerning insect injury. F.H.C.
161. Monthly letter No. 51. 5 p. July, 1918.
162. Monthly letter No. 52. 4 p. Aug., 1918.
163. Kerosene emulsion, F.H.C.
164. Monthly letter No. 53. 6 p. Sept., 1918.
165. Monthly letter No. 54. 6 p. Oct., 1918.
166. The European corn borer [*Pyrausta nubilalis* Hb.] (Poster, printed.)
167. Hopkins, A.D. Kerosene emulsion. March 3, 1918. (Forest Ent. Brief 3.)
Rev. Aug. 19, 1918.
168. Hopkins, A. D. Destruction of spruce and hemlock by the western hemlock
looper [*Ellopiia fuscicollaria* Gn.]. Dec. 4, 1918. (Forest Ent. Brief 42.)
169. Hopkins, A. D. Defoliation of Sitka spruce by the green spruce aphid
[*Aphis abietina* Walker.]. Dec. 4, 1918. (Forest Ent. Brief 43.)
170. Monthly letter No. 55. 5 p. Nov., 1918.
171. Map showing spread of the Mexican cotton boll weevil [*Anthonomus grandis*
Boh.] from 1892 to 1918. (Printed.)
172. Pierce, W. D. The occurrence of the boll weevil [*Anthonomus grandis*
Boh.] in 1918. (Printed.)
173. Monthly letter No. 56. 5 p. Dec., 1918.
174. Monthly letter No. 57. 5 p. Jan., 1919.
175. Hopkins, A. D. The poplar tent maker [*Melalopha inclusa* Hbn.]. Jan. 28,
1919. (Forest Ent. Brief 44.)
176. Monthly letter No. 58. 7 p. Feb., 1919.
177. Hessian fly [*Phytoph^{aga} destructor* Say]. (Poster, printed.)
178. Wheat jointworm [*Harmolita tritici* Fitch]. (Poster, printed.)
179. Alfalfa seed chalcis [*Bruchophagus funebris* Ashm.]. (Poster, printed.)
180. Monthly letter No. 59. 8 p. Mar., 1919.
181. Monthly letter No. 60. 5 p. Apr., 1919.
182. Monthly letter No. 61. 4 p. May, 1919.
183. Map. Gipsy and brown-tail moth quarantine. (Printed.)

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184. Monthly letter No. 62. June, 1919. 5 p.
185. Hopkins, A. D. The sugar maple borer. June 19, 1919. (Forest Ent. Brief 45)
186. Hopkins, A. D. The European elm scale (*Gossyparia spuria* Modeer). July 14, 1919. (Forest Ent. Brief. 46.)
187. Monthly letter No. 63. July, 1919. 5 p.
188. Woglum, R. S. Dosage schedule for citrus tree fumigation with liquid hydrocyanic acid 95 to 98 per cent pure. (Large card, printed.)
189. Monthly letter No. 64. Aug., 1919. 8 p.
190. Monthly letter No. 65. Sept., 1919. 4 p.
191. Hopkins, A. D. Scale insects on shade trees and shrubs and remedies for them. Apr. 3, 1916. (Forest Ent. Brief 8.) Rev. Sept. 24, 1919.
192. Monthly letter No. 66. Oct., 1919. 4 p.
193. Monthly letter No. 67. Nov., 1919. 4 p.
194. Monthly letter No. 68. Dec., 1919. 4 p.
195. Map showing spread of the Mexican cotton boll weevil from 1892 to 1919. (Printed.)
196. Coad, B. R. The distribution of the boll weevil in 1919. (Printed.)
197. Monthly letter No. 69. Jan., 1920. 4 p.
198. Monthly letter No. 70. Feb., 1920. 4 p.
199. Monthly letter No. 71. Mar., 1920. 4 p.
200. Monthly letter No. 72. Apr., 1920. 7 p.
201. Monthly letter No. 73. May, 1920. 7 p.
202. Monthly letter No. 74-75. June-July, 1920. 8 p.
203. Monthly letter No. 76. Aug., 1920. 7 p.
204. Monthly letter No. 77. Sept., 1920. 5 p.
205. Monthly letter No. 78. Oct., 1920. 5 p.
206. Monthly letter No. 79, Nov., 1920, and No. 80, Dec., 1920. 8 p. and 5 p. Both numbered E-206.)
207. Map showing spread of the Mexican cotton boll weevil from 1892 to 1920. (Printed.)
208. Monthly letter No. 81. Jan., 1921. 4 p.
209. The Mexican bean beetle. (Poster, printed.)
210. Monthly letter No. 82. Feb., 1921. 4 p.
211. Monthly letter No. 83. Mar., 1921. 6 p.
212. Monthly letter No. 84. Apr., 1921. 3 p.
213. Monthly letter No. 85. May, 1921. 5 p.
214. Monthly letter No. 86-87. June-July, 1921. 7 p.
215. Monthly letter No. 88. Aug., 1921. 4 p.
216. Monthly letter No. 89. Sept., 1921. 5 p.
217. Monthly letter No. 90. Oct., 1921. 4 p.
218. Monthly letter No. 91. Nov., 1921. 4 p.
219. Map showing the spread of the Mexican cotton boll weevil from 1892 to 1921. (Printed.)
220. Monthly letter No. 92. Dec., 1921. 3 p.
221. Monthly letter No. 93. Jan., 1922. 6 p.
222. Monthly letter No. 94. Feb., 1922. 5 p.
223. Monthly letter No. 95. Mar., 1922. 5 p.
224. Monthly letter No. 96. Apr., 1922. 4 p.
225. Monthly letter No. 97. May, 1922. 5 p.

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226. Monthly letter No. 98. 7 p. June, 1922.
227. Monthly letter No. 99. 5 p. July, 1922.
228. Monthly letter No. 100. 4 p. Aug., 1922.
229. May showing spread of the Mexican cotton boll weevil [*Anthonomus grandis* Boh.] from 1892 to 1922. (Printed.)
230. Newcomer, E. J., and Whitcomb, W. D. Control of codling moth [*Carpocapsa pomonella* L.] in eastern Washington. Mar. 9, 1923.
231. Hopkins, A. D. The question of quarantine against pinhole borers. Feb. 14, 1923. (Forest Ent. Brief 47.)
232. Yothers, M. A., and Van Leeuwen, E. R. Control of codling moth [*Carpocapsa pomonella* L.] in the Rogue River Valley, Oregon. Mar. 14, 1923.
233. Pick up and destroy peach "drops." Apr. 26, 1923.
234. Yothers, W. W., and Winston, J. R. Spraying for rust mites [*Phyllocoptes oleivorus* Ashm.] and scale insects [Coccidae] following spraying for melanose. May 3, 1923.
235. Directions for the use of paradichlorobenzene in controlling the peach tree borer [*Aegeria exitiosa* Say].
236. St. George, R. A. Brief information on insect damage to green ash logs and lumber. Dec. 5, 1923. (Forest Ent. Brief 48.)
237. St. George, R. A. Insect damage to unseasoned handle and wagon stock. Dec. 5, 1923. (Forest Ent. Brief 49.)
238. St. George, R. A. Insect damage to green gum logs and lumber. Dec. 5, 1923. (Forest Ent. Brief 50.)
239. St. George, R. A. Insect damage to cypress logs and lumber, Dec. 5, 1923. (Forest Ent. Brief 51.)
240. Causes frequently contributing to the attack of shade trees and hardy shrubs by borers. Jan. 15, 1924. (Forest Ent. Brief 52.)
241. Middleton, William. Care of wounds in treatment of shade trees for borers. (Forest Ent. Brief 53.) Jan. 15, 1924.
242. Middleton, William. Spider mites [*Tetranychus* spp.]. (Forest Ent. Brief 54.) Jan. 15, 1924.
243. Middleton, William. Defoliation of deciduous trees. (Forest Ent. Brief 55.) Jan. 15, 1924.
244. Middleton, William. Defoliation of evergreen trees. (Forest Ent. Brief 56.) Jan. 15, 1924.
245. Middleton, William. Ants about shade and park trees. (Forest Ent. Brief 57.) Dec. 15, 1923.
246. Middleton, William. Pine bud and shoot moths [*Rhyacionia* spp.]. (Forest Ent. Brief 58.) Jan. 15, 1924. Vill.
247. Bishopp, F. C. The heel fly [*Hypoderma lineatum* De.] grubs or "wolves" in cattle. Feb. 12, 1924.
248. Howard, Neale F. Control of the Mexican bean beetle [*Epilachna corrupta* Muls.] in the eastern States. Feb. 23, 1924.
249. Graf, J. E. Pickle [*Diaphania nitidalis* Stoll] and melon [*Diaphania hyalinata* L.] worms. May 26, 1924.
250. Graf, J. E. The European earwig [*Forficula auricularia* L.]. June 5, 1924.
251. St. George, R. A. Brief information on the protection of log cabins and rustic work from injurious insects. (Forest Ent. Brief 59.) Aug. 1, 1924.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

Publications, E series (Cont'd.)

- 252. Directions for the use of paradichlorobenzene in controlling the peach-tree borer. Sept. 15, 1924.
- 253. Directions for the use of lubricating-oil emulsions for the control of the San Jose scale on peach trees. Oct. 20, 1924.
- 254. Chamberlin, F. S. Suggestions for the control of insect pests of bright leaf tobacco in the Southern tobacco growing region.
- 255. Fink, D. E. The strawberry leaf-roller (*Ancylis comptana* Frohl.) and its control. Mar. 28, 1925.
- 256. The strawberry weevil [*Anthonomus signatus* Say] and its control. Apr. 4, 1925.
- 257. Bishopp, F. C. Benzol and repellents for screwworms [*Cochliomyia macellaria* Fab.] and maggots in stock.
- 258. Measures to be taken for louse control.
- 259. The white pine weevil [*Pissodes strobi* Peck]; its injury and control methods. Jan. 20, 1926. (Forest Ent. Brief 21.)
- 260. The control of cutworms in the Georgia and Florida tobacco regions.
- 261. Spraying and dusting schedule for Georgia peaches.
- 262. Circular on subject of earthworms.
- 263. Circular on subject of peach insect investigations.
- 264. Preparation of nicotine dust. May 1, 1926.
- 265. The turnip aphis [*Rhopalosiphum pseudobrassicae* Davis]. May 6, 1926.
- 266. Ants.
- 267. Bishopp, F. C. The control of flies on dairy cattle and around dairy buildings.
- 268. The cotton hopper [*Psallus seriatus* Reut.] situation. July 5, 1926.
- 269. Directions for the use of paradichlorobenzene for controlling the peach tree borer [*Aegeria exitiosa* Say]. Sept. 15, 1926.
- 270. Howard, N. F. Fluosilicates for the control of the Mexican bean beetle [*Epilachna corrupta* Muls.]. Feb. 28, 1927.
- 270. Spray schedule for Georgia peaches. 1927.
- 271. Calcium cyanide as a control for wireworms in the Pacific Northwest. 1927.
- 272. The operation of fly traps on the range for the control of screwworms [*Cochliomyia macellaria* Fab.] and wool maggots [*Phormia regina* Meigen]. 1927.
- 273. Method of preparing extract of pyrethrum flowers. 1927.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

1-127

Technical Series

1895-1921

(Series discontinued)

1. Howard, L.O. Revision of the Aphelininae of North America, a sub-family of hymenopterous parasites of the family Chalcididae. 44 p., illus. 1895.
2. Howard, L.O. The grass and grain joint-worm flies and their allies: A consideration of some North American phytophagic Eurytominae. 24 p., illus. 1896.
3. Marlatt, C.L. Revision of the Nematinae of North America, a sub-family of leaf-feeding Hymenoptera of the family Tenthredinidae. 135 p., illus. 1896.
4. Some Mexican and Japanese injurious insects liable to be introduced into the United States. 56 p., illus. 1896.
5. Howard, L.O. A study in insect parasitism: A consideration of the parasites of the white-marked tussock moth[(*Orgyia*) *Hemerocampa leucostigma* S. & A.], with an account of their habits and interrelations, and with descriptions of new species. 57 p., illus. 1897.
6. Cockerell, T.D.A. The San Jose scale [*Aspidiotus perniciosus* Comst.] and its nearest allies. A brief consideration of the characters which distinguish these closely related scale insects. 31 p., illus. 1897.
7. Coquillett, D. W. Revision of the Tachinidae of America north of Mexico. A family of parasitic two-winged insects. 156 p. 1897.
8. Quaintance, A.L. Contributions to a monograph of the American Aleurodidae. Banks, Nathan. The red spiders of the United States. (*Tetranychus* and *Stigmaeus*). 79 p., illus. 1900.
9. Pergande, Theodore. The life history of two species of plant-lice [*Hormaphis hamamelidis* Fitch and *Hamamelistes spinosus* Shimer] inhabiting both the witch-hazel and birch. 44 p., illus. 1901.
10. Cook, O.F. The social organization and breeding habits of the cotton-protecting kelep of Guatemala [*Ectatomma tuberculatum* Oliv.]. 55 p. 1905.
11. Coquillett, D.W. A classification of the mosquitoes of North and Middle America. 31 p., illus. 1906.
12. Miscellaneous papers. 1907-1909.
 - I. p. 1-18. Sanders, J.G. Catalogue of recently described Coccidae. 1906.
 - II. p. 19-38. Hine, J.S. Habits and life histories of some flies of the family Tabanidae. illus. 1906.
 - III. p. 39-68. Moulton, Dudley. A contribution to our knowledge of the Thysanoptera of California. illus. 1907.
 - IV. p. 69-88. Howard, L.O. New genera and species of Aphelininae, with a revised table of genera. illus. 1907.
 - V. p. 89-94. Quaintance, A.L. The more important Aleyrodidae infesting economic plants, with description of a new species [*Aleyrodes howardi*] infesting the orange. illus. 1907.
 - VI. p. 95-118. Townsend, C.H.T. A record of results from rearings and dissections of Tachinidae. illus. 1908.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

Technical Series (Cont'd.)

12. VII. p.119-122. Moulton, Dudley. The orange thrips [*Euthrips citri* ^{Moult.}].
VIII. p.123-168. Davis, J.J. Biological studies on three species ^{illus.} of Aphididae. ^{1909.} illus. 1909.
IX. p.169-174. Quaintance, A.L. A new genus of Aleyrodidae, with remarks on *Aleyrodes nubifera* Berger and *Aleyrodes citri* Riley and Howard. illus. 1909.
p.175-200. Contents and index. 1912.
13. Banks, Nathan. A revision of the Tyroglyphidae of the United States. 34 p., illus. 1906.
14. White, G.F. The bacteria of the apiary, with special reference to bee diseases. 50 p. 1906.
15. Banks, Nathan. A revision of the Ixodidae, or ticks, of the United States. 61 p., illus. 1908.
16. Papers on Coccidae or scale insects.
I. p. 1-10. Marlatt, C.L. The National collection of Coccidae. 1909.
II. p. 11-22. Marlatt, C.L. New species of diaspine scale insects. illus. 1908.
III. p. 36-60. Sanders, J.G. Catalogue of recently described Coccidae-II. 1909.
IV. p. 61-74. Sasser, E.R. Catalogue of recently described Coccidae-III. 1911.
V. p. 75-82. Sasser, E.R. The genus *Fiorinia* in the United States. illus. 1912.
VI. p. 83-97. Sasser, E.R. Catalogue of recently described Coccidae-IV. 1912.
VII. p. 99-116. Sasser, E.R. An index to catalogues of recently described Coccidae included in Technical Series Nos. 12 and 16. 1913.
p.117-132. Contents and index. 1921.
17. Contributions toward a monograph of the scolytid beetles.
I. p. 1-164. Hopkins, A.D. The genus *Dendroctonus*. illus. 1909.
II. p.165-232. Hopkins, A.D. Preliminary classification of the superfamily Scolytoidae. illus. 1915.
p.233-247. Contents and index. 1921.
18. Snodgrass, R.E. The anatomy of the honey bee [*Apis mellifica* L.]. 162 p., illus. 1910.
19. Technical results from the Gipsy Moth Parasite Laboratory.
I. p. 1-12. Howard, L.O. The parasites reared or supposed to have been reared from the eggs of the gipsy moth [*Porthetria dispar* L.]. illus. 1910.
II. p.13-24. Crawford, J.C. Descriptions of certain chalcidoid parasites. illus. 1910.
III. p.25-32. Patterson, T.L. Investigations into the habits of certain Sarcophagidae. With an introduction by W.F.Fiske. 1911.
IV. p.33-69. Smith, H.S. The chalcidoid genus *Perilampus* and its relations to the problem of parasite introduction. illus. 1912.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

Technical Series (Cont'd.)

19. V. p. 71-92. Timberlake, P.H. Experimental parasitism: A study of the biology of *Limnerium validum* (Cresson). illus. 1912. p. 93-102. Contents and index. 1916.
20. Technical papers on miscellaneous forest insects.
 - I. p. 1-68. Hopkins, A.D. Contributions toward a monograph of the bark-weevils of the genus *Pissodes*. illus. 1911.
 - II. p. 69-109. Rohwer, S.A. The genotypes of the sawflies and woodwasps, or the superfamily Tenthredinoidea. 1911.
 - III. p. 111-138. Kraus, E.J. A revision of the powder-post beetles of the family Lyctidae of the United States and Europe. Appendix. Notes on habits and distribution with list of described species. By A.D. Hopkins. 1911.
 - IV. p. 139-148. Rohwer, S.A. Studies in the sawfly genus *Hoplocampa*. illus. 1911.
 - V. p. 149-155. Webb, J.L. A preliminary synopsis of cerambycid larvae. illus. 1912.
 - VI. p. 157-163. Rohwer, S.A. Chalcidids injurious to forest-tree seeds. 1913.
 - p. 165-185. Contents and index. 1921.
21. Moulton, Dudley. Synopsis, catalogue, and bibliography of North American Thysanoptera, with descriptions of new species. 56 p., illus. 1911.
22. Banks, Nathan. The structure of certain dipterous larvae with particular reference to those in human foods. 44 p., illus. 1912.
23. Miscellaneous papers.
 - I. p. 11-24. Jones, P.R. Some new California and Georgia Thysanoptera. illus. 1912.
 - II. p. 25-52. Russell, H.M. An internal parasite of Thysanoptera [*Thripoctenus russelli* Crawford]. illus. 1912.
 - p. 53-57. Contents and index. 1915.
24. Pergande, Theodore. The life history of the alder blight aphid [*Prociphilus tessellata* Fitch]. 28 p., illus. 1912.
25. Papers on Aphididae.
 - I. p. 1-16. Phillips, W.J., and Davis, J.J. Studies on a new species of Toxoptera [*Toxoptera muhlenbergiae* n.sp.]. with an analytical key to the genus and notes on rearing methods. illus. 1912.
 - II. p. 17-40. Davis, J.J. The yellow clover aphid. (*Callipterus trifolii* Monell) illus. 1914.
 - p. 41-43. Contents and index. 1915.
26. Malloch, J.R. American black flies or buffalo gnats [*Simuliidae*]. 82 p., illus. 1914.
27. Quaintance, A.L., and Baker, A.C. Classification of the Aleyrodidae.
 - Part I. p. 1-93. illus. 1913.
 - Part II. p. 95-109. illus. 1914.
 - Contents and index. p. 111-114. 1915.

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BUREAU OF ENTOMOLOGY

Unnumbered publications

Comstock, J.H. Report upon cotton insects. Prepared under the direction of the Commissioner of Agriculture in pursuance of an act of Congress approved June, 1878. 511 p., illus. 1878.

Hubbard, H. G. Insects affecting the orange. Report on the insects affecting the oranges and other plants of the citrus family, with practical suggestions for their control or extermination. Made under the direction of the Entomologist. 227 p., illus. 1885.

Catalogue of the exhibit of economic entomology at the World's Industrial and Cotton Centennial Exposition, New Orleans, 1884-1885. 95 p. 1888.

Howard, L. O. Circular of information in regard to the work in silk culture. 1905.

Hopkins, A. D. Preliminary information on the management of storm felled pine timber to prevent damage by wood-boring insects, in States south of North Carolina, Tennessee, Missouri and Kansas. 1908.

Hopkins, A. D. Suggestions to correspondents for the collection of specimens and making of observations. 1908.

Chittenden, F. H. Investigations of insects affecting stored products. 1909.

Chittenden, F. H. Suggestions for treatment of the common elm tree borer. 1909.

Parker, W. B. Flour paste as a "spreader" for lime sulphur sprays. 1912.

Howard, L. O. Some directions for the preparation of specimens of insects.

Map showing the spread of the cotton boll weevil from 1892 to 1914. Revised 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, and 1923.

Grasshopper disease fungus.

Hunter, W. D., and Pierce, W. D. The movement of the cotton boll weevil [*Anthonomus grandis* Boh.] in 1913. 2 p. Dec., 1913.

Marlatt, C. L. The periodical cicada [*Tibicen septendecim* L.] in 1914. 3 p., illus. May 27, 1914.

Hunter, W. D. The pink boll worm [*Gelechia gossypiella* Saund.]. 6 p., illus. Aug. 7, 1914.

Hunter, W. D., and Pierce, W. D. The movement of the cotton boll weevil in 1914. 2 p., map. Dec. 31, 1914.

Mosher, F. H., and Clement, G. E. Some timely suggestions for the owners of wood lots in New England. 8 p. 1917.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

Mimeographed Material

Out of a considerable accumulation of mimeographed material a selection has been arbitrarily made of a few articles in demand and giving information which is not likely to appear in print later.

Quarantine of the gipsy moth [Map]. 1913.

Monthly letter, Nos. 1-164, March, 1914-Dec., 1927. Nos. 10-16, printed; Nos. 1-11 have title News letter. (Many of these are in the "E" series of the Bureau of Entomology.)

Proceedings of the class formed to study the entomology of disease, hygiene and sanitation, Nos. 1-30, May 13, 1918-Dec. 16, 1918. 409 p. (Conducted by W. D. Pierce.)

Walton, W. R., and Wade, J. S. The European corn borer and its control in Hungary [Abstract]. 25 p.

Pratt, J. G. Suggestions for the help of photographers at field stations of the Department of Agriculture. 15 p. 1922.

Program and plan of European corn borer investigations 1921, 1925, 1926-1923.

Present status of establishment in the United States of imported bulb pests. 8 p. 1925. (Report of the bulb pest survey, prepared by C. A. Weigel.)

Questions and answers on the European corn borer. 1927. 16 p., illus. (Prepared in cooperation with the Office of Cooperative Extension Work.)

--- Supplement no. 1. March 21, 1927, 2 p.

--- Supplement no. 2. April 7, 1927, 2 p.

A bibliography on weather conditions and the codling moth. (Prepared by I. L. Hawes.) 5 p. March, 1927.

Cooperative report on boll weevil emergence from tests prior to March, 1927. Nos. 1-10. Semimonthly.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

Mimeographed material (Cont'd.)

European corn borer control. Report of a conference held at Chicago, Ill. June 3, 1926. Discussing farm machinery methods of control. 31 p.

Summarized report of the extension conference on the control of the European corn borer, Toledo, Ohio, July 21 and 22, 1927. 7 p.

Report of the Joint committee on the European corn borer appointed by the American Association of Economic Entomologists, the American Society of Agronomy and the American Society of Agricultural Engineers. 5 p. Sept. 30, 1927.

Report of European corn-borer control campaign by the U. S. Department of Agriculture for the period March 14, 1927, to October 31, 1927, inclusive. 42 p. Dec. 5, 1927. (Later reprinted from Hearings before the Committee on Agriculture, H. R., Cong. 70, Sess. 1, Jan. 24, 25, and 26, 1928, p. 65-89.)

UNITED STATES ENTOMOLOGICAL COMMISSION

Members of the Commission: C. V. Riley, A. S. Packard, and Cyrus Thomas. The Commission was attached to the United States Geological and Geographical Survey of the Territories, Department of the Interior, until March 3, 1881. The third report of the Commission inaugurated its transfer to the Department of Agriculture. Of the Bulletins, Nos. 1 and 2 were made under the direction of the United States Geological and Geographical Survey of the Territories (Hayden); Nos. 3-7 under the direction of the Department of the Interior; none were issued under the Department of Agriculture. (These publications are included here because used mainly in connection with the publications of the Bureau of Entomology.)

Bulletins

1. Destruction of the young or unfledged locusts [(Caloptenus) Melanoplus spretus Uhl.]. 12 p. 1877.
2. On the natural history of the Rocky Mountain locust [(Caloptenus) Melanoplus spretus Uhl.]. and on the habits of the young or unfledged insects as they occur in the more fertile country in which they will hatch the present year. 14 p., illus. 1877.

UNITED STATES ENTOMOLOGICAL COMMISSION

Bulletins (Cont'd)

3. The cotton worm[(*Aletia*) *Alabama argillacea* Hubn.]. Summary of its natural history, with an account of its enemies, and the best means of controlling it; being a report of progress of the work of the Commission. By C. V. Riley. 144 p., illus. 1880.
4. The Hessian fly [(*Oecidomyia*) *Mayetiola destructor* Say]. Its ravages, habits, enemies, and means of preventing its increase. By A. S. Packard. 43 p., illus. 1880.
5. The chinch-bug [*Blissus leucopterus* Say]. Its history, characters and habits, and the means of destroying it or counteracting its injuries. 44 p., illus. 1879.
6. General index and supplement to the nine reports on the insects of Missouri. By C. V. Riley. 177 p. 1881.
7. Insects injurious to forest and shade trees. By A. S. Packard. 275 p., illus. 1881.

Special bulletin for Nebraska. How to destroy the young and unfledged locusts. No. 1. Lincoln, Neb. 1877. 4 p. Signed: Cyrus Thomas.

Reports

1. First annual report for the year 1877, relating to Rocky Mountain locust [(*Caloptenus*) *Melanoplus spretus* Uhl.] and the best methods of preventing its injuries and guarding against its invasions, in pursuance of an appropriation made by Congress for this purpose. xvi, 477, 294 p., illus. 1878.
2. Second report for the years 1878 and 1879, relating to the Rocky Mountain locust [(*Caloptenus*) *Melanoplus spretus* Uhl.] and the western cricket [*Anabrus simplex* Hald.] and treating of the best means of subduing the locust in its permanent breeding grounds, with a view of preventing its migrations into the more fertile portions of the trans-Mississippi country, in pursuance of appropriations made by Congress for this purpose. xviii, 322, 80 p., illus. 1880.
3. Third report, relating to the Rocky Mountain locust, the western cricket, the army worm, canker worms and the Hessian fly, together with descriptions of larvae of injurious forest insects, studies of embryological development of the locust and of other insects, and on the systematic position of the Orthoptera in relation to other orders of insects. xiv, 347, 12, 92 p., illus. 1883.

UNITED STATES ENTOMOLOGICAL COMMISSION

Reports (Cont'd)

4. Fourth report, being a revised edition of Bulletin No. 3, and the final report on the cotton worm [(Aletia) Alabama argillacea Hbn.], together with a chapter on the boll worm [Heliothis obsoleta Fab. (H. armiger Hubn.)]. By C. V. Riley. xxxviii, 399, 147 p., illus. 1883.
5. Fifth report, being a revised and enlarged edition of Bulletin No. 7, on Insects injurious to forest and shade trees. By A. S. Packard. viii, 957 p., illus. 1890.

Circulars

(Issued by the Interior Department)

1. Letter as to collecting facts about the Rocky Mountain locust [Melanoplus spretus Uhl.] 187-, 4 p. Signed: Chas. V. Riley, A. S. Packard, Jr., Cyrus Thomas.
2. [Summary on locust plans.] St. Louis, Mo., 187-, [4]p. Signed: C. V. Riley.
3. [Letter asking cooperation in studying the locust or destructive grasshopper.] May 15, 1877. 2 p. Signed: A. S. Packard, Jr. Sec'y. U. S. Entomological Com'n.
4. [Additional questions to Circular 1.]
5. [Permanent region of Rocky Mountain locust.] 3 p. 187-. Signed: C. V. Riley.
6. [Re: exhaustion of first report of Commission.] 187-. Signed: C. V. Riley.
7. Relating to the cotton worm [(Aletia) Alabama argillacea Hbn.] 187-. Signed: C. V. Riley, Chief, U.S.E.C. 2 p.
8. [Hessian fly.] Providence, R. I. June, 1879. 1 p. Signed: A. S. Packard, Jr.
9. [Chinch-bug.] Carbondale, Ill. July, 1879. 1 p. Signed: C. V. Riley.
10. [Relating to the cotton worm.] July, 1880. 2 p. Signed: C. V. Riley, Chief, U.S.E.C.
11. [Hektograph letter on Pyrethrum roseum.] 1 p. 1881. Signed: C. V. Riley, Chief, U.S.E.C.
12. Bibliography of American (and Canadian) economic entomology. Providence, R.I., Jan. 1, 1881. 1 p. Signed: A. S. Packard, Jr.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL ECONOMICS

Organized July 1, 1922, this bureau includes the former Bureau of Markets, the former Bureau of Crop Estimates, and the former Office of Farm Management and Farm Economics.

Market News Service

Semimonthly reports--Honey. Nos. 1-230. June 15, 1917-Dec. 15, 1927.
(Mimeographed.)

BUREAU OF ANIMAL INDUSTRY

Organized in 1884

1-28 Annual Reports 1884-1911

The Bureau of Animal Industry published in 1884 its first Annual Report, giving a detailed statement of the work of the Bureau, embracing results of experiments in the laboratory and of many important investigations made by its experts and agents. These reports were discontinued with No. 28 for 1911. The personal reports of the Chief for 1884-1911 appeared in these reports, in the Annual Reports of the Department of Agriculture, and also separately in pamphlet form, and of course have been issued yearly since 1911.

- 1887-88 (4th-5th), p. 456-465. Webster, F. M. Buffalo gnats. 1889.
1889-90 (6th-7th), p. 95-98. Smith, Theobald. The relation of ticks to Texas cattle fever. 1891.
1891-92 (8th-9th), p. 96-102. Smith, Theobald. Texas cattle fever. p. 236-273. Smith, Theobald. The transmission of Texas fever by means of the cattle tick *Boophilus bovis* (Riley) Curtice. 1893.
1895-96 (12th-13th), p. 109-118. Norgaard, V. A. Dipping cattle for destruction of ticks. 1897.
p. 318-321. Hills, W. E. Texas fever in Kansas. 1897.
1897 (14th), p. 98-154. Salmon, D. E., and Stiles, C. W. Sheep scab: its nature and treatment.
1899 (16th), p. 32-41. Schroeder, E. C., and Cotton, W. E. Experiments with Texas Fever and southern cattle ticks. Growing non-infested ticks and afterwards infesting them.
p. 41-42. Schroeder, E. C. A note on the vitality of the southern cattle tick.
p. 42-43. A note on the persistence of the Texas fever organism in the blood of cattle.
p. 43-52. An experiment in blood and serum infections in connection with cattle fever investigations.
p. 93-95. Salmon, D. E. The progress made in the control of Texas fever.
p. 496-500. Hassall, Albert. Note on the chicken tick *Argas miniatus* Koch.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Annual Reports (Cont'd.)

- 1900 (17th), p. 69-86. Salmon, D. E. The work against sheep scab. 1901.
p. 380-491. Salmon, D. E., and Stiles, C. W. Cattle ticks (Ixodoidea) of the United States. 1901.
- 1901 (18th), p. 75-79. Salmon, D. E., and Stiles, C. W. Source of infection by the parasite of surra. A. From the bite of or infection by insects as carriers of the parasites.
p. 125-139. Prevention of surra.
p. 140-153. Nagana, or tsetse-fly disease.
p. 583-589. Results of the work against sheep scab.
- 1902 (19th), p. 33-44. Jones, E. B. The work against sheep scab in 1902. 1903.
p. 45-61. Hickman, R. W. Scabies in cattle.
- 1903 (20th), p. 41-53. Goodpasture, C. O. Report of the work against sheep scab in 1903. 1904.
- 1904 (21st), p. 447-460. Goodpasture, C. O. Report of the work against scabies of sheep and cattle. 1905.
- 1905 (22d), p. 49-70. Schroeder, E. C. Notes on the cattle tick and Texas fever. 1907.
p. 71-78. The persistence of the Texas fever organism in the blood of southern cattle. 1907.
- 1906 (23d), p. 101-112. Steddom, R. P. The first season's work for the eradication of the cattle tick. 1908.
- 1907 (24th), p. 259-277. Melvin, A. D., and Mohler, J. R. Dermal mycosis associated with sarcoptic mange in horses. illus. 1909.
- 1908 (25th), p. 431-479. Rules and regulations of the Secretary of Agriculture relating to the Animal Industry, issued in 1908. 1910.
- 1909 (26th), p. 81-98. Mohler, J. R., and Thompson, W. A study of surra found in an importation of cattle, followed by prompt eradication.
p. 94-98. The role of the Tabanidae in the transmission of surra..
p. 283-300. MacKellar, W. M., and Hart, C. H. Eradicating cattle ticks in California. 1911.
- 1910 (27th), p. 255-265. Curtice, Cooper. Progress and prospects of tick eradication. illus. 1912.
p. 267-284. Ransom, B. H., and Graybill, H. W. The use of arsenical dips in tick eradication. illus.
p. 419-463. Hall, Maurice C. Our present knowledge of the distribution and importance of some parasitic diseases of sheep and cattle in the United States. illus.
p. 465-498. Crawley, Howard. The protozoan parasites of domesticated animals. Illus. [Some are carried by ticks and biting flies.]

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

1-167

Bulletins

1893-1914

(Series discontinued)

1. Smith, Theobald, and Kilborne, F. L. Investigations into the nature, causation and prevention of Texas or southern cattle fever. 301 p., illus. 1893.
p. 85-129. The transmission of Texas fever by means of the cattle tick, *Boophilus bovis* (Riley) Curtice.
3. Miscellaneous investigations concerning infectious and parasitic diseases of domesticated animals; conducted by F. L. Kilborne, Veranus A. Moore, E. C. Schroeder, Theobald Smith and C. W. Stiles. 86 p., illus. 1893.
21. Salmon, D. E., and Stiles, C. W. Sheep scab: Its nature and treatment. 64 p., illus. 1898. [Caused by *Psoroptes communis* Furst.] p. 19-56. Dipping. (Rev., 1900.)
39. Stiles, C. W., and Hassall, Albert. Index catalogue of medical and veterinary zoology. 36 pts. (2,700 p.) 1902-1912.
40. Hickman, R. W. Description and treatment of scabies in cattle. 23 p. illus. 1902. (Treats of *Psoroptes communis* and dipping plants.)
42. Salmon, D. E., and Stiles, C. W. Emergency report on surra, with a Bibliography of surra and allied trypanosomatic diseases, by Albert Hassall. 152 p., illus. 1902.
p. 99-109. Horseflies [Tabanidae].
p. 110-123. Nagana or tsetse-fly disease.
69. Stevenson, E. C. The external parasites of hogs, being articles on the hog louse (*Haematopinus suis* L.) and mange, or scabies, of hogs. 44 p., illus. 1905.
78. Mohler, J. R. Texas fever (otherwise known as tick fever, splenetic fever, or southern cattle fever) with methods for its prevention. 43 p., illus. 1905.
97. Proceedings of a conference of Federal and State representatives to consider plans for the eradication of the cattle tick [*Margaropus annulatus* Say] held at Nashville, Tenn., December 5 and 6, 1906. 98 p. 1907.
107. Chapin, R. M. The analysis of coal-tar creosote and cresylic acid sheep dips. 35 p., illus. 1908.
112. Marsh, C. D. The loco-weed disease of the plains. 130 p., illus. 1909.
130. Graybill, H. W. Studies on the biology of the Texas fever tick [*Margaropus annulatus* Say]. 42 p., illus. 1911.
144. Ransom, B. H., and Graybill, H. W. Investigations relative to arsenical dips as remedies for cattle ticks. 65 p., illus. 1912.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Bulletins (Contd.)

152. Graybill, H. W., and Lewellen, W. M. Studies on the biology of the Texas fever tick [*Boophilus annulatus* Say]. (Supplementary report.) 13 p. 1912.
163. Ransom, B. H. The life history of *Habronema muscae* (Carter), a parasite of the horse transmitted by the house fly [*Musca domestica* L.]. 36 p., illus. 1913.
167. Graybill, H. W. The action of arsenical dips in protecting cattle from infestation with ticks. 27 p. 1913.

1-213 1-218 Circulars 1893-1911

9. Hassall, Albert. Check list of the animal parasites of chickens (*Gallus domesticus*). 7 p. 1896.
p. 6-7. Arachnida. Mites.
p. 7. Insects.
12. Hassall, Albert. Check list of the animal parasites of turkeys (*Meleagris gallopavo mexicana*). 3 p. 1896.
p. 2-3. Arachnida (Mites).
p. 3. Insects.
13. Hassall, Albert. Check list of the animal parasites of ducks (*Anas boschas domestica*). 7 p. 1896.
p. 6. Arachnida.
p. 7. Insects.
14. Hassall, Albert. Check list of the animal parasites of geese (*Anser anser domesticus*). 5 p. 1896.
p. 5. Insects.
15. Hassall, Albert. Check list of the animal parasites of pigeons (*Columba livia domestica*). 4 p. 1896.
p. 3-4. Arachnida (Mites).
p. 4. Insects.
34. Stiles, C. W., and Hassall, Albert. Notes on parasites, 55-57. 4 p. 1901.
55. A pupa like stage in the development of the spinose ear tick [*Ornithodoros megnini* Duges] of cattle.
56. *Boophilus australis* present in Cuba, Porto Rico, Venezuela, and India.
57. A new host for *Strongylus contortus* and *Cysticercus tenuicollis*.
69. Salmon, D. E., and Smith, Theobald. Texas fever, or Southern cattle fever. 13 p. 1904. (Reprinted from Special report on diseases of cattle, 1904, p. 458-471.)

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Circulars (Cont'd.)

- 76. Ransom, B. H. Preliminary note on a protozoan (*Chaos accarophila*) occurring in the eggs, larvae, nymphs and adults of ticks. 2 p. 1905.
- 89. Frice, T. M. The preparation of emulsions of crude petroleum. 4 p. 1906.
- 97. Steddom, R. P. How to get rid of cattle ticks. 4 p., illus. 1906. Rev., 1908.
- 98. Ransom, B. H. Some unusual host relations of the Texas fever tick. 8 p. 1906.
- 110. Klein, L. A. Methods of eradicating cattle ticks. 16 p. 1907.
- 148. Hunter, W. D., and Mitchell, J. D. A practical demonstration of a method for controlling the cattle tick [*Margaropus annulatus* Say]. 4 p. 1909.
- 167. Chapin, R. M. The dimethyl sulphate test of creosote oils and creosote dips; a substitute for the sulphonation test. 7 p. 1911.
- 169. Mohler, J. R., and Thompson, William. A study of surra found in an importation of cattle, followed by prompt eradication. p. 81-97. 1911. (From 26th Ann. Rpt. Bur. Anim. Indus., 1909.)
p. 89. [Carried by Tabanidae.]
- 174. MacKellar, W. M., and Hart, G. H. Eradicating cattle ticks in California. p. 283-300. 1911. (From 26th Ann. Rpt. Bur. Anim. Indus., 1909.)
- 182. Fuller, A. V. The spontaneous oxidation of arsenical dipping fluids. 3 p. 1911.
- 183. Graybill, H. W., and Ellenberger, W. P. Directions for constructing a vat and dipping cattle to destroy ticks. 15 p. 1911. (Superseded by Bur. Anim. Indus. Circ. 207.)
- 187. Curtice, Cooper. Progress and prospects of tick eradication. p. 255-265. 1912. (From 27th Ann. Rpt. Bur. Anim. Indus., 1910.)
- 193. Hall, M. C. Our present knowledge of the distribution and importation of some parasitic diseases of sheep and cattle in the United States. p. 419-463, illus. 1912. (From 27th Ann. Rpt. Bur. Anim. Indus., 1910.)
p. 453-456. *Oestrus ovis* [L.].
p. 456-461. *Psoroptes communis* [Furst.].
- 196. Some results of cattle tick eradication. 4 p. 1912.
- 206. Lamon, H. H. Hints to poultry raisers. 5 p.
p. 4. Lice and mites.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Circulars (Cont'd.)

207. Graybill, H. W., and Ellenberger, W. P. Directions for constructing vats and dipping cattle to destroy ticks. 22 p. 1912. (A revision of Circular 183.) (Reprint, with slight revision, 1915.)
215. Mohler, J. R., and Eichhorn, Adolph. Malta fever, with special reference to its diagnosis and control in goats. p. 119-136. 1913. (From 28th Ann. Rpt. Bur. Anim. Indus., 1911.)

Documents

- A - 2. Progress and results of cattle-tick eradication. 12 p. 1914.
- A - 4. Ward, W. F. Effects of cattle tick eradication on the cattle industry of the South. 26 p. 1914. Reprinted with slight revision, June, 1917. 26 p., illus.

Press Bulletins

3. Texas fever in cattle. 1 p. Feb. 1, 1906.

Orders

143. Regulations of the Secretary of Agriculture governing the inspection, disinfection, certification, treatment, handling... of livestock which is the subject of interstate commerce. 31 p. 1907.

Instructions concerning work under BAI order 263, "Regulations governing interstate movement of live stock." 56 p. 1919.
p. 6-22. Movement of southern cattle and dipping for tick.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Rules

1. Revision 15. To prevent the spread of splenetic, southern or Texas fever in cattle. Effective on and after Dec. 11, 1916. (Also issued as Order 251.)
2. To prevent the spread of scabies in cattle. Effective on and after June 1, 1905. 1 p.
3. To prevent the spread of scabies in sheep. Effective on and after June 1, 1905. 1 p.

Service and Regulatory Announcements

Nos. 1 - 248. May 15, 1907-Dec., 1927. (Nos. 1 - 80 have title: "Service announcements.") Give substances used for official cattle dipping, methods of trapping flies, roaches, etc.
Examples:

95. Destroy flies now. Trapping roaches. March, 1915. p. 32.
105. Flytraps for slaughtering and meat-packing establishments. Jan., 1916. p. 2-6.
107. Operation of flytraps at official establishments. March, 1916. p. 23-25.

Unnumbered Publications

Reports on the diseases of cattle in the United States, made to the Commissioner of Agriculture... 190 p. 1869. (Reports by John Ganges, H. W. Ravenel, J. S. Billings, and Edward Curtis.)

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Unnumbered Publications (Cont'd.)

Special report on diseases of cattle and on cattle feeding. Prepared under the direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, by Drs. Murray, Atkinson, Harbaugh, Lowe, Law, Dickson, Trumbower, Smith, and Prof. Henry. 496 p., illus. 1892.

- p. 337-346. Trumbower, M. R. Parasitic diseases of the skin.
- Revised, 1904. 533 p., illus.
- p. 453-471. Salmon, D. E., and Smith, Theobald. Infectious diseases of cattle. Southern cattle fever.
- p. 473-494. Stiles, C. W. The animal parasites of cattle.
- Revised, 1903. 551 p., illus.
- p. 461-493. Salmon, D. E., and Smith, Theobald. Infectious diseases of cattle. Southern cattle fever [Texas fever].
- p. 495-516. Ransom, B. H. Animal parasites.
- Revised, 1912. 576 p., illus.
- p. 480-515. Salmon, D. E., and Smith, Theobald. Southern cattle fever.
- p. 515-516. Nagana [tsetse-fly disease].
- p. 518-541. Ransom, B. H. Animal parasites of cattle.
- Revised, 1916. 568 p., illus.
- p. 473-509. Mohler, J. R. Infectious diseases of cattle (Southern cattle fever, Texas fever, tick fever).
- p. 510-536. Ransom, B. H. Animal parasites of cattle.
- Revised, 1925. 563 p., illus.
- p. 475-501. Mohler, J. R. Southern cattle fever (Texas fever, tick fever).
- p. 502-531. Ransom, B. H. Animal parasites of cattle.

Special report on diseases of the horse, prepared under the direction of D. E. Salmon by Drs. Michener, Law, Harbaugh, Trumbower, Liautard, Holcombe, Huidkoper and Dickson. 560 p., illus. 1890.

- p. 34-46. Bots, larvae of the gadfly.
- p. 438-443. Law, James. Animal parasites of the skin.
- Revised, 1903. 600 p., illus.
- p. 450-456. Law, James. Animal parasites of the skin.

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BUREAU OF ANIMAL INDUSTRY

Unnumbered Publications (Cont'd.)

Special report on diseases of the horse. Rev., 1907. 608 p., illus.

- p. 441-455. Law, James. Animal parasites of the skin.
---- Revised, 1911. 614 p., illus.
p. 451-456. Law, James. Animal parasites of the skin.
---- Revised, 1916. 629 p., illus.
p. 478-483. Law, James. Animal parasites of the skin.
---- Revised, 1923. 629 p., illus.
p. 478-483. Law, James. Animal parasites of the skin. (Revised by
M. C. Hall.)

Curtice, Cooper. The animal parasites of sheep. 222 p., illus. 1890.
Ed. 2., 1890.

Contagious diseases of domestic animals. Investigations by Department of Agriculture, 1883-1884. 368 p., illus.
p. 247-259. Detmers, H. J. Investigations of Southern cattle fever.

Instructions concerning inspection and dipping of sheep and cattle for scabies. 6 p. 1904.

Instructions concerning preparation and application of dips, and reporting inspection and dippings of sheep and cattle for scabies. 16 p. 1907.

Ward, H. F. Effects of tick eradication on the cattle industry of the South. 26 p. 1914. Reprinted with slight revision, June, 1917.

Progress and results of cattle tick eradication. 12 p. Apr. 4, 1914.

The tick primer. 7 p., illus. 1915. Reprinted with changes, 1916.

Instructions concerning the work of the field inspection division. 1915.

Cattle ticks worse than a wound. 4 p., illus. 1916. Reprinted with changes, 1917.

A tick-free South. 15 p. 1917.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Unnumbered Publications (Cont'd.)

Regulations of the Secretary of Agriculture governing the inspection, disinfection, certification, treatment, handling and methods and manner of delivery and shipment of live stock which is the subject of interstate commerce. 27 p. 1905.

Regulations of the Secretary of Agriculture governing the inspection, etc., of live stock which is the subject of interstate commerce, with rules to prevent the spread of splenetic fever in cattle and scabies in cattle and sheep. 65 p. 1907.

Map to indicate area quarantined on account of Texas fever. 1911.

Mohler, J. R. European fowl pest found in poultry in the United States. 2 p. [1924.] (Mimeographed.)

Map showing boundary line of district infested with splenetic or southern cattle fever. (5 maps, each 10.2 by 15.8 inches. These maps are identical on the face, but the reverse of each shows a different section of the boundary line on a larger scale.)

MacKellar, W. M. How to get the last tick. 20 p., illus. 1920.

Report showing status of tick eradication in several States. Jan., 1923-June, 1927. (Mimeographed.)

The story of the cattle fever tick. What every Southern child should know about cattle ticks. 31 p. Oct. 1, 1917. (Rev. June 12, 1922. Spanish ed. La garrapata que produce la fiebre bovina o tristeza. Lo que todo niño campesino debe saber acerca de la garrapata que ataca al ganado vacuno. 28 p. 1922.

Activities of the Bureau of Animal Industry veterinarians in building up the nation's ten-billion dollar live stock industry, including timely facts and figures of public interest. 40 p. 1919.
p. 14-17. Science, industry and cooperation win - how the cattle tick is eradicated.
p. 24-26. Mange eradicated by dipping cattle.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

1 - 45

Bulletins
(Series discontinued)

1889-1913

No. 1 issued by Division of Economic Ornithology and Mammalogy; No. 2 by Division of Economic Ornithology; Nos. 3-8 by Division of Ornithology; Nos. 9-18 by Division of Biological Survey; Nos. 19-31 by Bureau of Biological Survey. Later bulletins emanating from the Survey are published in the series of Bulletins of the U. S. Department of Agriculture.

1. Barrows, W. B. The English sparrow (*Passer domesticus*) in North America, especially in its relation to agriculture. 405 p., map. 1889.
p. 98-132. Relation of the sparrow to insects.
p. 111-133. Riley, C. V. Insectivorous habits of the English sparrow.
3. Fisher, A. K. The hawks and owls of the United States in their relation to agriculture. 210 p., illus. 1893.
(Gives insect contents of birds' stomachs.)
6. Barrows, W. B., and Schwarz, E. A. The common crow of the United States. 98 p., illus. 1895.
p. 56-71. Schwarz, E. A. Insect food of the crow.
7. Beal, F. E. L. Preliminary report on the food of woodpeckers.
p. 7-33. Lucas, F. A. The tongues of woodpeckers.
p. 35-39. illus. 1895. (Notes on insects as food.)
9. Cuckoos and shrikes in their relation to agriculture. 26 p., illus. 1893.
p. 7-14. Beal, F. E. L. The food of cuckoos.
p. 15-26. Judd, S. D. The food of shrikes.
[Insect food given.]
10. Merriam, C. H. Life zones and crop zones of the United States. 79 p., map. 1898.
12. Palmer, T. S. Legislation for the protection of birds other than game birds. 94 p., illus. 1900.
p. 23-25. Insectivorous and song birds.
Rev. ed. 143 p., illus. 1902.
p. 31-32. Insectivorous and song birds.
13. Beal, F. E. L. Food of the bobolink, blackbirds, and grackles. 77 p., illus. 1900. (Gives insect contents of birds' stomachs.)
15. Judd, S. D. The relation of sparrows to agriculture. 98 p., illus. 1901. (Gives notes on insect food.)
17. Judd, S. D. Birds of a Maryland farm, a local study of economic ornithology. 116 p., illus. 1902.
p. 21-49. Insect food.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

Bulletins (Cont'd.)

21. Judd, S. D. The bobwhite and other quails of the United States in their economic relations. 66 p., illus. 1905.
p. 37-46. Insects as food.
22. Bailey, Vernon. Birds known to eat the boll weevil. 16 p. 1905.
23. McAtee, W. L. The horned larks and their relation to agriculture. 37 p. illus. 1905.
p. 22-32. Insects.
24. Judd, S. D. The grouse and wild turkeys of the United States and their economic value. 55 p., illus. 1905. (Food habits of each bird are given.)
p. 14-15. Insect food.
25. Howell, A. H. Birds that eat the cotton boll weevil, a report of progress. 22 p. 1906.
29. Howell, A. H. The relation of birds to the cotton boll weevil. 31 p., illus. 1907.
30. Beal, F. E. L. Birds of California in relation to the fruit industry. Part I. 100 p., illus. 1907. (Notes insects eaten.)
32. McAtee, W. L. Food habits of the grosbeaks. 92 p., illus. 1908.
34. Beal, F. E. L. Birds of California in relation to the fruit industry. Part II. 96 p., illus. 1910. (Notes insects eaten.)
37. Beal, F. E. L. Food of the woodpeckers of the United States. 64 p., illus. 1911. (Insect food given.)
43. McAtee, W. L. Index to papers relating to the food of birds by members of the Biological Survey in publications of the United States Department of Agriculture, 1885-1911. 69 p. 1911.
44. Beal, F. E. L. Food of our more important flycatchers. 67 p., illus. 1912. (Gives insects eaten and destroyed.)

Circulars

1. Merriam, C. H. Circular on the food-habits of birds. 3 p. 1886. (Insect food mentioned.)
2. Merriam, C. H. Circular on the English sparrow. 1 p. 1886. (Mentions it as eating insects.)
56. Henshaw, H. W. Value of swallows as insect destroyers. 4 p. 1907.
57. Henshaw, H. W. Birds useful in the war against the cotton boll weevil. 4 p. 1907.
61. Fisher, A. K. Hawks and owls from the standpoint of the farmer. 13 p., illus. 1907. (Notes insects consumed.)

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

Circulars (Cont'd.)

64. Howell, A. H. Destruction of the cotton bell weevil by birds in winter. 5 p. 1908..
79. McAtee, W. L. Our vanishing shore birds. 9 p., illus. 1911.
(Mentions insects eaten.)
82. Henshaw, H. W., and Birdseye, Clarence. The mammals of Bitter Root Valley, Montana, in their relation to spotted fever. 24 p., illus. 1911.

North American Fauna

7. The Death Valley Expedition. A biological survey of parts of California, Nevada, Arizona, and Utah. Pt. 2. 402 p., illus. 1893.
p. 233-268. Report on a small collection of insects made during the Death Valley Expedition. By C. V. Riley. With supplementary reports and descriptions of new species by S. W. Williston, P. R. Uhler and Lawrence Bruner.
46. A biological survey of the Pribilof Islands. 255 p., illus. 1923.
- I. p. 1-128. Preble, E. A., and McAtee, W. L. Birds and mammals.
- II. p. 129-244. McAtee, W. L., et al. Insects, arachnids, and chilopods.
- p. 139. McAtee, W. L. Apterygota.
- p. 140. Hebard, Morgan. Orthoptera.
- p. 141. Ferris, G. F. Mallophaga.
- p. 142. McAtee, W. L. Anoplura.
- p. 143-144. Patch, E. M. Homoptera.
- p. 145. McAtee, W. L. Heteroptera.
- p. 146. Banks, Nathan. Trichoptera.
- p. 147-149. Forbes, W. T. M. Lepidoptera.
- p. 150-157. Wickham, H. F. Coleoptera.
- p. 158. Banks, Nathan. Mecoptera.
- p. 159-169. Alexander, C. P. Diptera, suborder Orthorrhapha, division Nematocera, families Tipulidae and Rhyphidae.
- p. 170-227. Malloch, J. R. Diptera (except Tipulidae, Rhyphidae, and Calliphoridae).
- p. 228. Walton, W. R. Diptera, suborder Cyclorrhapha, division Schizophora, family Calliphoridae.
- p. 229-236. Viereck, H. L. Hymenoptera.
- p. 237-239. Banks, Nathan. Arachnida.
- p. 240-244. Chamberlin, R. V. Chilopoda.

UNITED STATES DEPARTMENT OF AGRICULTURE

DIVISION OF BOTANY

Organized in 1869; merged into the Bureau of Plant Industry
July 1, 1901.

1 - 29

Bulletins 1886-1901
(Series discontinued)

9. Smith, E. F. Peach yellows. 254 p., illus. 1888.
p. 17. [*Aegeria exitiosa* responsible.]
p. 94-95. [*Aegeria exitiosa* and *Aphis chrysanthemi* Koch
blamed.]
11. Galloway, B. T. Report on the experiments made in 1889 in
the treatment of the fungous diseases of plants. 119 p.,
illus. 1890.
p. 43. Spraying rose-bug with Bordeaux.
p. 77. Insects and fungus [brown rot] associated.
20. Chesnut, V. K. Principal poisonous plants of the United States.
60 p., illus. 1898.
p. 12-18. Fly amanita (*Amanita muscaria* L.) Fr.
25. Cook, C. F. Shade in coffee culture. 79 p., illus. 1901.
p. 34-36. Shade and the coffee leaf miner, *Cemistoma*
coffeela.

Circulars

15. Kains, M. G. Horse radish. 8 p. 1898.
p. 6. Enemies.

Contributions from U. S. National Herbarium

The U. S. National Herbarium, founded by the Smithsonian Institution, was transferred to the Department of Agriculture in 1868, and returned to the custody of the Smithsonian Institution July 1, 1906. The Department of Agriculture, however, continued to publish this series of botanical reports until July 1, 1902, when the National Museum again assumed the responsibility of the publication.

66. Mohr, Charles. Plant life of Alabama. 321 p., illus. 1901.
p. 52-53. Insectivorous plants.
7. Systematic and geographic botany and aboriginal uses of plants,
1900-1902. 422 p., illus.
p. 295-422. No. 5. Chesnut, V. K. Plants used by the
Indians of Mendocino County, California.
p. 350. [Leaves of *Umbellularia californica* (Arnott) Nutt.
used as insecticide and germicide; leaves excellent to
drive away fleas.]
p. 384. [*Pogogyne parviflora* Benth. used to drive away fleas.]

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

Created in 1862 as Division of Chemistry; changed to Bureau of Chemistry July 1, 1901. Combined with Bureau of Soils on July 1, 1927, to form the Bureau of Chemistry and Soils. This new Bureau combines the research work of the old Bureau of Chemistry and the Bureau of Soils and the Fixed Nitrogen Research Laboratory. The regulatory work formerly carried on by the Bureau of Chemistry has been combined with the regulatory work of the Insecticide and Fungicide Board, and forms the new Food, Drug and Insecticide Administration.

1895-1911, H. W. Wiley, Chief; 1912, R. W. Doolittle, Acting Chief; 1913-1921, C. L. Alsberg, Chief; 1922-1923, W. G. Campbell, Acting Chief; 1924-1927, C. A. Browne, Chief.

Annual Reports

1893-1920, 1922-1923 from Annual Report, U. S. Department of Agriculture; all also published separately.

- 1893. p.186. An insect visitation [chinch bugs on sorghum.]
- 1901. p.98-99. Investigation of insecticides.
- 1902. p.151. Insecticides and agricultural water laboratory.
- 1903. p.191-192. The insecticide and agricultural water laboratory.
- 1904. p.219, 233-234. Insecticides and agricultural water laboratory.
- 1905. p.507-508. Insecticides and agricultural water laboratory.
- 1906. p.13. Insecticides and fungicides.
- 1907. p. 12-13. Insecticides.
- 1908. p.34. Insecticides and fungicides.
- 1909. p.31-32. Insecticides and fungicides.
- 1910. p.55-56. Insecticides and fungicides.
- 1911. p.40-41. Insecticides and fungicides.
- 1912. p.42-43. Insecticides and fungicides.
- 1913. p. 8. Insecticides.
- 1914. p. 9-10. Insecticides and fungicides.
- 1915. p. 3. Insecticides and fungicides.
- 1916. p. 195. Insecticides and fungicides - tree-banding material.
- 1917. p. 4. Insecticides and fungicides.
- 1918. p. 22. Insecticides.
- 1919. p. 20. Insecticides and fungicides.
- 1920. p. 21-23. Insecticides and fungicides.
- 1921. p. 41-44. The insecticide and fungicide laboratory.
- 1922. p. 5-7. Work on insecticides and fungicides.
p. 127-128. Adulteration of honey.
- 1923. p. 10-12. Insecticide and fungicide investigations.
- 1924. p. 11-13. Insecticide and fungicide investigations.
- 1925. p. 7-8. Insecticide investigations.
- 1926. p. 9. Insecticide and fungicide investigations.
p. 9. Oil emulsions.
p. 9-10. Chemotropic work with flies.
- 1927. p. 11. Insecticides and fungicides.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

1-166

Bulletins

1883-1913

(Series Discontinued)

13. Foods and food adulterants. Part 6. Sugar, molasses and sirup, confections, honey and beeswax. (Investigations made under the direction of H. W. Wiley.) p. 633-874. 1892.
p. 866-869. Bibliography of beeswax, arranged by years.
p. 869-871. Bibliography of waxes used in adulterating beeswax, arranged by years.
p. 871-874. Bibliography of honey, arranged by years.
32. Wedderburn, A. J. Special report on the extent and character of food adulteration, including state and other laws relating to food and beverages. 174 p. 1892.
p. 147-148. Adulterated honey must be marked.
36. Wiley, H. W. Experiments with sugar beets in 1892. (With the collaboration of Dr. Walter Maxwell.) 74 p. 1893.
p. 68-70. The sugar beet webworm. (*Loxostege sticticalis* Linn.)
48. Wiley, H. W. Zinc in evaporated apples. 38 p. 1896.
p. 9. *Ephestia elutella*, *E. interpunctella*, and *Silvanus surinamensis*.
57. Proceedings of the 16th annual convention of the Association of Official Agricultural Chemists, held at San Francisco, Cal., July 5, 6, and 7, 1899. Ed. by H. W. Wiley, 130 p. 1899.
62. Proceedings of the 17th annual convention of the Association of Official Agricultural Chemists, held at Washington, D. C., November 16, 17, and 19, 1900. Ed. by H. W. Wiley, 163 p. 1901.
p. 139-143. Voorhees, L. A. Report on fungicides and insecticides.
67. Proceedings of the 18th annual convention of the Association of Official Agricultural Chemists, held at Washington, D. C. November 14, 15, and 16, 1901. Ed. by H. W. Wiley. 184 p.
p. 87-96. Voorhees, L. A. Insecticides and fungicides.
p. 96-102. Haywood, J. K. Report on the arsenical insecticides.
68. Haywood, J. K. The chemical composition of insecticides and fungicides, with an account of the methods of analysis employed, in cooperation with the Division of Entomology. 62 p. 1902.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

Bulletins (Cont'd.)

73. Proceedings of the 19th annual convention of the Association of Official Agricultural Chemists, held at Washington, D. C., October 2, 3, and 4, 1902. 187 p.
p. 153-167. Haywood, J. K. Report on insecticides and fungicides.
76. Haywood, J. K. Insecticide studies. I. Pyrethrum powders containing poisonous metals. II. A compilation of analyses of insecticides and fungicides. III. State laws governing the composition and sale of insecticides. 63 p. 1903.
81. Proceedings of the 20th annual convention of the Association of official Agricultural Chemists held at Washington, D. C., November 19, 20, and 21, 1903. 252 p.
p. 195-203. Haywood, J. K. Report on insecticides and fungicides.
82. Haywood, J. K. Paris green spraying experiments. 32 p., illus. 1904.
90. Proceedings of the 21st annual convention of the Association of Official Agricultural Chemists held at St. Louis, Mo., September 26, 27, and 28, 1904. Ed. by Harvey W. Wiley. 254 p. 1905.
99. Proceedings of the 22d Annual convention of the Association of Official Agricultural Chemists, held at Washington, D. C., November 16, 17, and 18, 1905. Ed. by Harvey W. Wiley. 211 p.
p. 35-39. Haywood, J. K. A study of the lime-sulphur-salt wash.
101. Haywood, J. K. The lime-sulphur-salt wash and its substitutes. 29 p. 1907. (In collaboration with the Bureau of Entomology.)
110. Browne, C. A. Chemical analysis and composition of American honeys, including a microscopical study of honey pollen. 93 p., illus. 1908.
116. Proceedings of the 24th annual convention of the Association of Official Agricultural Chemists held at Jamestown Exposition, Norfolk, Va., Oct. 9-11, 1907. Ed. by Harvey W. Wiley. 142 p. 1908.
p. 123-129. Davidson, R. J. Report on insecticides.
122. Proceedings of the 25th annual convention of the Association of Official Agricultural Chemists held at Washington, D. C., November 12-16, 1908. 248 p. 1909.
p. 105-110. McDonnell, C. C. Report on insecticides.

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131. Haywood, J. K., and McDonnell, C. C. Lead arsenate. I. Composition of lead arsenate found on the market. II "Home-made" lead arsenate and the chemicals entering into its manufacture. III. Action of lead arsenate on foliage. 50 p., illus. 1910. (In cooperation with the Bureau of Entomology.)
132. Proceedings of the 28th annual convention of the Association of Official Agricultural Chemists held at Denver, Colorado, August 26-28, 1909. Ed. by Harvey W. Wiley. 217 p. 1910. p. 42-29. McDonnell, C. C. Report on insecticides.
137. Proceedings of the 27th annual convention of the Association of Official Agricultural Chemists held at Washington, D. C., November 10-12, 1910. Ed. by H. W. Wiley. 211 p. 1911. p. 36-40. McDonnell, C. C. Report on insecticides. p. 40-42. McDonnell, C. C., and Roark, R. C. Determination of lead in lead arsenate as lead chromate.
152. Proceedings of the 28th annual convention of the Association of Official Agricultural Chemists held at Washington, D. C., November 20-22, 1911. 268 p. 1912. p. 68-72. McDonnell, C. C. Report on insecticides.
154. Bryan, A. H., Given, Arthur, and Sherwood, Sidney. Chemical analysis and composition of imported honey from Cuba, Mexico, and Haiti. 21 p. 1912.
162. Proceedings of the 29th annual convention of the Association of Official Agricultural Chemists, Washington, D. C., September 16-18, 1912. Ed. by W. D. Bigelow, with the collaboration of G. O. Savage. 246 p. 1913. p. 27-37. Averitt, S. D. Report on insecticides. p. 38-43. McDonnell, C. C. Composition and methods of analysis of lime sulphur solution. p. 136-137. Barnard, H. E. Formic acid in honey.

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10. Haywood, J. K. Methods for the analysis of insecticides and fungicides. 8 p. 1902. Rev., 1905, 11 p.
86. Feldstein, L. The refractive index of beeswax. 3 p. 1911.

Chemistry Bibliography

1. Roark, R. C. Chloropicrin. 73 p. 1926. (Mimeographed?)

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF EXPERIMENT STATIONS

Organized in 1888. From July 1, 1915, to June 30, 1923, it did not exist as a separate office but was a division of the States Relations Service. On July 1, 1923, the Office of Experiment Stations was re-organized.

Annual Reports

1902. p. 343-352. The changa [*Scapteriscus vicinus* Latr.]
1903. p. 414-418. Entomological investigations [Hawaii].
p. 429-450. Barrett, O.M. Report of entomologist and botanist [Porto Rico].
p. 456-468. Earle, E. S. Notes on diseases and insects [Porto Rico].
1904. p. 372-379. Van Dine, D.L. Entomological work [Hawaii].
p. 387-389. Barrett, O.W. Report of the entomologist and botanist [Porto Rico].
1905. p. 239-280. Wilcox, E.V. Some results of experiment station work with insecticides.
1908. p. 21. Entomology in Hawaii.
p. 26. Insects affecting citrus fruits [Porto Rico].
1909. p. 22. Entomological work [Hawaii].
p. 25-27. Entomological work [Porto Rico].
p. 29. Entomological work [Guam].
1910. p. 25. Entomological work mentioned in Hawaii.
p. 27. Entomological work mentioned in Porto Rico.
1911. p. 22. Entomological work [Hawaii].
p. 25. Entomological work [Porto Rico].

Work and expenditures of the Agricultural Experiment Stations

1916. P. 43-45. Allen, E.W., Wilcox, E.V., and Schulte, J.I. Entomological investigations.
1917. p. 32-34. Allen, E.W., Flint, E.R., and Schulte, J.I. Entomology.
p. 38. Insecticides.
1918. p. 20-22. Allen, E.W., Flint, E.R., and Schulte, J.I. Entomology.
1919. p. 63-69. Allen, E.W., Flint, E.R., and Schulte, J.I. Entomology and Zoology.
1920. p. 62-67. Allen, E.W., Flint, E.R., and Schulte, J.I. Entomology.
1921. p. 69-77. Allen, E.W., Flint, E.R., and Schulte, J.I. Entomology and Zoology.
1922. p. 46-56. Allen, E.W., Beal, W.H., and Flint, E.R. Entomology.
1923. p. 48-53. Allen, E.W., Beal, W.H., and Flint, E.R. Entomology.
1924. p. 18-20. Allen, E.W., Beal, W.H., and Flint, E.R. Entomology.
1925. p. 41-47. Allen, E.W., Beal, W.H., and Flint, E.R. Entomology.
1926. p. 54-58. Allen, E.W., and Beal, W.H. Entomology.

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OFFICE OF EXPERIMENT STATIONS

Miscellaneous Bulletins

3. Proceedings of the 4th Annual Convention of the Association of Agricultural Colleges and Experiment Stations held at Champaign, Ill., November 11, 12, and 13, 1890. 156 p. 1891.
p. 29-34. Forbes, S. A. Report of progress in economic entomology.
p. 144-150. The Permanent Committee on Entomology. [Includes a paper by F. H. Snow on chinch bug [*Blissus leucopterus* Say] and fungus.]

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2. Digest of the annual reports of the agricultural experiment stations in the United States for 1888. Part 2. 172 p. 1891.
p. 32-37. Popenoe, E. A., Marlatt, C. L., and Mason, S. C. Report of the Department of Horticulture and Entomology [Kansas].
7. Proceedings of the 5th annual convention of the Association of American Agricultural Colleges and Experiment Stations held at Washington, D. C., August 12-18, 1891. 113 p. 1892.
p. 78-85. Report of the Section of Entomology.
15. Handbook of experiment station work. A popular digest of the publications of the agricultural experiment stations in the United States. 411 p. 1893. (The alphabetic subject arrangement contains many references to insects.)
16. Proceedings of the 6th annual convention of the Association of American Agricultural Colleges and Experiment Stations held at New Orleans, La., November 15-19, 1892. Ed. by A. W. Harris and H. E. Alvord. 176 p. 1893.
p. 41-51. Bruner, L. Report of the Section on Entomology.
24. Proceedings of the 8th annual convention of the Association of American agricultural colleges and experiment stations held at Washington, D. C., November 13-15, 1894. 98 p. 1895.
p. 85-88. Osborn, H. The section on entomology. Entomological work in experiment stations.

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Bulletins (Cont'd.)

30. Proceedings of the 9th annual convention of the Association of American agricultural colleges and experiment stations held at Denver, Colo., July 16-18, 1895. Ed. by A.C.True and H.H.Goodell. 100 p. 1896.
p. 17-18. Gillette, C. P. Report of the section on entomology.
p. 95-96. The section on entomology.
33. The cotton plant; its history, botany, chemistry, culture, enemies and uses. (With an introduction by C.W.Dabney.) 433 p., illus. 1896.
p. 317-350. Howard, L.O. The insects which attack the cotton plant in the United States.
41. Proceedings of the 10th annual convention of the Association of American agricultural colleges and experiment stations held at Washington, D.C., November 10-12, 1896. 120 p. 1897.
p. 107-110. Section on entomology.
42. Foaden, G.P. Cotton culture in Egypt. 34 p. 1897.
p. 22-25. Insect pests.
49. Proceedings of the 11th annual convention of the Association of American agricultural colleges and experiment stations held at Minneapolis, Minn., July 13-15, 1897. 100 p. 1898.
p. 16-18. Hopkins, A.D. Report of the section on entomology.
p. 90. Section on entomology.
65. Proceedings of the 12th annual convention of the Association of American agricultural colleges and experiment stations held at Washington, D.C., November 15-17, 1898. Ed. by A.C.True, W.H.Beal, and H.H.Goodell. 138 p. 1899.
p. 24-27. Smith, J.B. Report of the section on entomology.
p. 133-134. Section on entomology.
76. Proceedings of the 13th annual convention of the Association of American agricultural colleges and experiment stations held at San Francisco, Cal., July 5-7, 1899. 112 p. 1900.
p.44-45. Woodworth, C.W. Report of the section on entomology.
99. Proceedings of the 14th annual convention of the Association of American agricultural colleges and experiment stations held at New Haven and Middletown, Conn., November 13-15, 1900. 192 p. 1901.
p. 17-21. Garman, H. Report of the section on entomology.
p. 153-183. Section on entomology.

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Bulletins (Cont'd.)

115. Proceedings of the 15th annual convention of the Association of American agricultural colleges and experiment stations held at Washington, D.C., November 12-14, 1901. Ed. by A.C. True, W.H. Beal, and H.H. Goodell. 134 p. 1902.
- p. 117-131. Report of the section on entomology.
 - p. 118-119. Smith, J.B. A year's experience with crude petroleum.
 - p. 119-120. Fernald, H. T. Insects of the year in Massachusetts.
 - p. 120. Slingerland, M.V. Some suggestions and notes.
 - p. 123-127. Sanderson, E. D. Aphids of the apple, pear and quince.
 - p. 127-128. Garman, H. The time of emergence and oviposition of the spring brood of the Hessian fly [*Phytophaga destructor* Say].
 - p. 128-129. Morgan, H.A. Life history of the sugar-cane borer [*Diatraea saccharalis* Fab.] in Louisiana.
 - p. 129-131. Gossard, H.A. Florida observations; experimental work.
123. Proceedings of the 16th annual convention of the Association of American agricultural colleges and experiment stations held at Atlanta, Ga., October 7-9, 1902. 144 p. 1903.
- p. 122-130. Fernald, H.T. Report of section on entomology.
 - p. 122-126. Forbes, S.A. Excellencies and defects of existing legislation for the control of insect and fungous pests.
 - p. 126-130. Smith, J.B. Recent observations and experiments with insecticides for the San Jose scale [*Aspidiotus perniciosus* Comst.].
142. Proceedings of the 17th annual convention of the Association of American agricultural colleges and experiment stations held at Washington, D.C., November 17-19, 1903. 196 p. 1904.
- p. 180-192. Section on entomology.
 - p. 180-182. Hopkins, A.D. Methods of work and some results in forest insect investigations.
 - p. 182-183. Felt, E.P. Importance of laboratory and field work in economic entomology.
 - p. 183-184. Record devices.
 - p. 184-185. Smith, J.B. The New Jersey ideal in the study and report upon injurious insects.
 - p. 186-189. Woodworth, C.W. Cooperative work in economic entomology.
 - p. 189-192. Burgess, A.F. The results of uniform methods of inspection and treatment of nursery stock.

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Bulletins (Cont'd.)

170. Smith, J.G. Report on agricultural investigations in Hawaii. 66 p. 1906.
p. 38-59. Van Dine, D.L. Report of the entomologist.
171. May, D.W. Report on agricultural investigations in Porto Rico. 47 p. 1906.
p. 22-23. Investigations in entomology and plant pathology.
178. Green, S.B. Course in fruit growing for movable schools of agriculture. 100 p. 1907.
p. 43-52. Quaintance, A.L. Sixth lecture. The control of injurious insects.
196. Proceedings of the 21st annual convention of the Association of American agricultural colleges and experiment stations held at Lansing, Mich., May 28-30, 1907. 114 p. 1907.
p. 104-109. Slingerland, M.V. The more urgent problems in insect control.

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23. Key to the subject index of literature of agricultural experiment stations and kindred institutions. 3 p. 1897. (Rev., 1902).
31. True, A.C. Comp. Some books on agriculture and agricultural science, published 1893-1896. 176 p. 1896.
p. 113-116. Entomology.
38. Some books on agriculture and sciences relating to agriculture, published 1896-1898. 45 p. 1898. Prepared by the Office of Experiment Stations in cooperation with the library of the Department of Agriculture.
p. 30-34. Entomology.
54. True, A.C. et al. Report of Committee on indexing agricultural literature. 2 p. 1903.

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Experiment Station Record

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A technical review of the current literature of agricultural investigations throughout the world. Each number contains abstracts of literature under the heading: "Economic zoology-Entomology"

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GUAM AGRICULTURAL EXPERIMENT STATION

Bulletins

2. Briggs, Glen. Vegetable growing in Guam. 60 p., illus. 1922.
p. 17-24. Plant enemies.
3. Briggs, Glen. The sorghums in Guam. 28 p., illus. 1922.
p. 26-27. Insect pests of sorghum [Leaf-folder, *Marasmia trapezalis* Guen., European corn borer, *Pyrausta nubilalis* Hbn., and rice bug, *Leptocorisa varicornis* Fab].

Extension Circulars

3. Green, W. J. Corn growing in Guam for club members. 13 p.,
illus. 1923.
p. 12-13. Insect pests.

HAWAII AGRICULTURAL EXPERIMENT STATION

Annual Reports

The Annual reports for 1902-1905 appeared in publications of the Office of Experiment Stations as notes. From 1906-1927 they were published separately. In each report here listed only articles relating to entomology are given.

1902. Smith, J. G. Entomological investigations. (In Annual report of the Office of Experiment Stations for the year ended June 30, 1902, p. 323-325.)
1903. Smith, J. G. Entomological investigations. (In Annual report of the Office of Experiment Stations for the year ended June 30, 1903, p. 414-418.)
1904. Van Dine, D. L. Entomological work. A partial list of the injurious insects of Hawaii. (In Annual report of the Office of Experiment Stations for the year ended June 30, 1904, p. 372-379, illus.)
1905. Van Dine, D. L. Report of the entomologist. (In Office of Experiment Stations Bulletin 170, p. 38-59.)
1906. p. 18-32. Van Dine, D. L. Report of the entomologist.
1907. p. 25-51. Van Dine, D. L. Report of the entomologist.
1908. p. 17-41. Van Dine, D. L. Report of the entomologist.
1909. p. 17-46. Fullaway, D. T. Report of the entomologist.
1910. p. 19-24. Fullaway, D. T. Report of the entomologist.
1911. p. 17-24. Fullaway, D. T. Report of the entomologist.
1912. p. 16-34. Fullaway, D. T. Report of the entomologist.
1913. p. 18-21. Fullaway, D. T. Report of the entomologist.
1914. p. 43-50. Fullaway, D. T. Report of the entomologist.

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INSULAR STATIONS

Five agricultural experiment stations are under the supervision of the Office of Experiment Stations - Alaska, Guam, Hawaii, Porto Rico, and the Virgin Islands.

ALASKA AGRICULTURAL EXPERIMENT STATION

Annual Reports

- 1915. p. 13. Georgeson, C. C. A root maggot.
- p. 41-42. Georgeson, C. C. Insect pests.
- 1919. p. 79. Butzin, A. F. Cabbage root maggots.
- 1920. p. 18. Georgeson, C. C. Root maggots on cruciferae.
- p. 20. Georgeson, C. C. Insects in greenhouse.

GUAM AGRICULTURAL EXPERIMENT STATION

Annual Reports

- 1911. p. 26-35. Fullaway, D. T. Entomological notes.
- 1912. p. 27. Thompson, J. B. Work with the honey bee.
- 1913. p. 20-21. Thompson, J. B. Work with the honey bee.
- 1914. p. 16-17. Thompson, J. B. Apiary work.
- 1915. p. 25-30. Barber, L. B. Tick fever.
- p. 41-43. Nelson, P. Apicultural notes.
- 1916. p. 48-49. Barber, L. B. Effect of tick infestation.
- p. 58. Hartenbower, A. O. Parasitic disease studies.
- 1917. p. 57-62. Weston, W. H. Conditions in Guam favoring the development of plant diseases.
- 1918. p. 36-38. Briggs, Glen. Insects injurious to rice. illus.
- 1919. p. 33. Edwards, C. W. Rice bug, *Leptocoris varicornis*,
- 1920. p. 39-41. Briggs, Glen. Insect pests.
- p. 67. Edwards, C. W. Tick eradication demonstration.
- 1925. p. 17-20. Vandenberg, S. R. Report of the entomologist.
[Mentions coconut scale, *Aspidiotus destructor* Sign., *Pyrausta nubilalis* Hbn., and *Rhabdocnemis obscurus* Boisd.]

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Annual Reports (Cont'd.)

1915. p. 28. Fullaway, D. T. Report of the entomological department.
1917. p. 39. Westgate, J. M. Mite disease of potatoes.
1918. p. 40. Westgate, J. M. Mite disease of potato.
p. 43-45. Westgate, J. M. Miscellaneous insects and fungous diseases.
1919. p. 53. Carpenter, C. W. A mite disease affecting sweet peppers.
1920. p. 24-25. Westgate, J. M. Spraying and pruning demonstration.
1921. p. 24-25. Pope, W. T. Spraying experiments.
p. 34. Chung, H. L. Insect pests.
1924. p. 12. Westgate, J. M. *Cylas formicarius* [Fab.] on sweet potato.
1926. p. 14. Westgate, J. M. Chayote as a possible trap crop for melon flies.

Bulletins

3. Van Dine, D. L. Insecticides in use in Hawaii. 20 p., illus. 1902. Rev. Jan. 8, 1904, 21 p. illus.
5. Van Dine, D. L. A sugar-cane leafhopper. [*Perkinsiella saccharicida* Kirkaldy] in Hawaii. 29 p., illus. 1904.
6. Van Dine, D. L. Mosquitoes in Hawaii. 30 p., illus. 1904.
7. Higgins, J. E. The banana in Hawaii. 53 p., illus. 1904.
p. 32. Insect and other enemies.
9. Higgins, J. E. Citrus fruit in Hawaii. 31 p., illus. 1905.
p. 25-28. Insect and other enemies.
10. Van Dine, D. L. Insect enemies of tobacco in Hawaii. 32 p., illus. 1905.
11. Smith, J. G. The black wattle (*Acacia decurrens*) in Hawaii. 16 p., illus. 1906.
p. 16. Insect enemies.
12. Higgins, J. E. The mango in Hawaii. 32 p., illus. 1906.
p. 24-26. Insects.
16. Smith, J. G., and Bradford, Q. Q. The ceera rubber tree in Hawaii. 30 p., illus. July 3, 1906.
p. 30. Insect enemies.
17. Van Dine, D. L., and Thompson, Alice R. Hawaiian honeys, 21 p., illus. 1906.
18. Fullaway, D. T. Insects of cotton in Hawaii. 27 p. 1909.
22. Fullaway, D. T. Insects attacking the sweet potato in Hawaii. 31 p., illus. 1911.

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Bulletins (Cont'd.)

25. Higgins, J. E., Hunter, C. J., and Holt, V. X. The avocado in Hawaii. 48 p., illus. 1911.
p. 21-23. Control of injurious insects.
27. Fullaway, D. T. Insects injurious to corn. 20 p. July 11, 1912.
29. Wilcox, E. V., and Holt, V. S. Ornamental Hibiscus in Hawaii. 60 p. 1913.
p. 16-17. Insects and diseases of Hibiscus.
32. Higgins, J. E., and Holt, V. S. The papaya in Hawaii. 44 p. March 26, 1914.
p. 44. Insect pests.
34. Fullaway, D. T. Tobacco insects in Hawaii. 20 p. May 25, 1914.
44. Higgins, J. E. The litchie in Hawaii. 21 p., illus. July 27, 1917.
p. 15-18. Insects and mites.
45. Carpenter, C. W. Potato diseases in Hawaii and their control. 42 p. 1920.
p. 4-15. Prevention and control of potato pests.
p. 13-15. Tuber moth [*Phthorimaea operculella* Zell.]
p. 31-35. Mite disease.
46. Krauss, F. G. The pigeon pea (*Cajanus indicus*): its culture and utilization in Hawaii. 23 p. Dec. 16, 1921.
p. 22-23. Pests and diseases.
49. Pope, W. T. The acid lime fruit in Hawaii. 20 p., illus. July 9, 1923.
p. 10-14. Insect pests and remedies for them.
50. Chung, H. L. The sweet potato in Hawaii. 20 p., illus. Oct. 1923.
p. 11-13. Insect enemies and methods of control.
51. Pope, W. T. The Guatemalan avocado in Hawaii. 24 p., illus. Aug. 16, 1924.
p. 14-15. Control of insect enemies.
54. Chung, H. L., and Ripperton, J. C. Edible cane in Hawaii. 16 p., illus. July, 1924.
p. 7. Insects and diseases.
55. Pope, W. T. Banana culture in Hawaii. 48 p., illus. Dec. 26, 1926.
p. 21-23. Enemies.

Press Bulletins

7. Van Dine, D. L. Mosquitoes. 1 p., illus. 1903. (A "poster," issued also in Portuguese, Hawaiian, Japanese, and Chinese.)
8. Van Dine, D. L. The mealy bug [*Pseudococcus nipae* Mask.] or "pear blight" of the aligator pear. 6 p. Oct. 21, 1903.

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Press Bulletins (Cont'd)

10. Van Dine, D. L. The pineapple scale [*Diaspis bromeliae* Kerner]. 6 p. Aug. 11, 1904.
14. Van Dine, D. L. Fuller's rose beetle [*Aramigus fulleri* Horn]. 8 p., illus. Oct. 19, 1905.
16. Van Dine, D. L. The avocado mealy bug [*Pseudococcus nipae* Mask.]. 12 p., illus. June 13, 1906. (Reprint of Press Bul.8.)
17. Van Dine, D. L. The mango weevil [*Cryptorhynchus mangiferae* Fab.]. 11 p., illus. Aug. 14, 1906.
19. Krauss, F. G. A preliminary report on rice investigations. 7 p. Jan. 19, 1907.
p. 6. Insect pests.
20. Van Dine, D. L. The introduction of top minnows (natural enemies of mosquitoes) into the Hawaiian Islands. 10 p., illus. July 25, 1907.
22. Higgins, F. E. Pineapple shipping experiments in 1908. 6 p., folded table. (No date.)
p. 5-6. Insect quarantines.
32. McClelland, C. K., and Sahr, C. A. Cultural methods for controlling the cotton boll worm [*Heliothis obsoleta* Fab.]. 8 p., illus. 1912.
36. Higgins, J. E. The pineapple in Hawaii. 34 p. June 21, 1912.
p. 31-34. Fullaway, D. T. Insect pests.
46. McClelland, C. K. Poultry management. 54 p. June 20, 1914.
p. 46-54. Lice, mites and vermin.
47. Wilcox, E. V., and Hunn, C. J. Cold storage for tropical fruits. 12 p. Oct. 20, 1914. (Control of fruit flies discussed.)

Extension Bulletins

2. Krauss, F. G. Extension notes II. 7 p. Apr. 24, 1917.
p. 2-4. Ridding cows of flies.
4. Carpenter, C. W. Emergency series II. Methods of combating garden pests. 16 p. Aug. 13, 1917.
10. Langdale, E. H., comp. Index to publications of the Hawaii Agricultural Experiment Station (July 1, 1901, to December 31, 1926). 28 p. June, 1927.

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PORTO RICO AGRICULTURAL EXPERIMENT STATION

Annual Reports

1903. Gardner, F. D. (In annual report of the Office of Experiment Stations for the year ended June 30, 1903, p. 419-468.)
p. 442-448. Insect pests.
p. 456-462, Earle, F. S. Notes on diseases and insects.
1904. May, D. W. (In Annual report of the Office of Experiment Stations for the year ended June 30, 1904, p. 383-424.)
p. 387-399. Report of O.W.Barrett, entomologist and botanist.
1905. p. 46-47. May, D. W. Diseases and insect pests of coffee.
1906. p. 25-28. Tower, W. V. Report of the entomologist and plant pathologist.
1907. p. 51-38. Tower, W. V. Report of the entomologist and plant pathologist.
1908. p. 23-28. Tower, W. V. Report of the entomologist.
1909. p. 24-28. Tower, W. V. Report of the entomologist.
1910. p. 31-34. Tower, W. V. Report of the Entomologist.
1911. p. 32-36. Tower, W. V. Report of the entomologist.
1912. p. 34-38. Hooker, C. W. Report of the entomologist.
1914. p. 31-35. Van Zwaluwenburg, R. H. Report of the entomologist.
1915. p. 42-45. Van Zwaluwenburg, R. H. Report of the entomologist.
1916. p. 25-28. Van Zwaluwenburg, R. H. Report of the entomologist.
1917. p. 31-34. Van Zwaluwenburg, R. H. Report of the entomologist.
1918. p. 15-17. Tower, W. V. Report of the entomologist.
1919. p. 21-25. Tower, W. V. Report of the entomologist.
1920. p. 23-27. Tower, W. V. Report of the entomologist.
1921. p. 23-26. Tower, W. V. Report of the entomologist.
1922. p. 13-14. Tower, W. V. Report of the entomologist.
1923. p. 11-15. Tower, W. V. Report of the entomologist.
1926. p. 30-31. Dikmans, G. Report of the parasitologist.

Bulletins

2. Barrett, O. W. La changa, o grillotalpa (*Scapteriscus didactylus* Latr.) en Puerto Rico. 20 p. Sept., 1902.
7. Hennicksen, H. C. Vegetable growing in Porto Rico. 58 p., illus. Feb., 1906.
p. 18-20. Insect enemies.
10. Tower, W. V. Insectos perjudiciales a frutas del genero citrus y medios de combatirlos. 36 p., illus. Mar. 1, 1912.
Insects injurious to citrus fruits and methods for combating them. 35 p., illus. 1911.

UNITED STATES DEPARTMENT OF AGRICULTURE
PORTO RICO AGRICULTURAL EXPERIMENT STATION

Bulletins (Cont'd)

15. Phillips, E. F. Porto Rican beekeeping. 24 p., illus. May 29, 1914. Spanish ed. La apicultura Portorriquena. 28 p., illus. 1915.
23. Van Zwaluwenburg, R. H. The changa or West Indian mole cricket (*Scapteriscus vicinus*). 28 p., illus. 1918.
24. Kinman, C. E. The mango in Porto Rico. 30 p., illus. 1918.
p. 24. Protection against fruit flies [*Anastrepha fraterculus* Wied.]
29. May, D. W. La vaquerias en Puerto Rico. 16 p., illus. 1923.
p. 6-7. La garrapata bovina [*Margaropus annulatus* Say].

Circulars

7. Tower, W. V. Control of the brown ant [*Solenopsis geminata* Fab.] and the mealy bug [*Pseudococcus citri* Risso] in pineapple plantations. 4 p. 1908.
13. Tower, W. V. Beekeeping in Porto Rico. 31 p. June, 1911.
14. Tower, W. V. A study of mosquitoes in San Juan, Porto Rico, 1912. 23 p., illus.
16. Van Zwaluwenburg, R. H., and Vidal, Rafael. Rearing queen bees in Porto Rico. 12 p., illus. Feb. 25, 1918.
La cria de abejas reinas en Puerto Rico. 12 p. Oct. 18, 1918.
17. Van Zwaluwenburg, R. H., and Thomas, H. E. Some means of controlling insects, fungi and other pests in Porto Rico. 30 p. June 27, 1918.
20. Tower, W. V. Mosquito survey of Mayaguez. 8 p., illus. Nov. 2, 1918.
23. Van Zwaluwenburg, R. H. The changa or West Indian mole cricket [*Scapteriscus vicinus* Latr.]. 28 p., illus. Feb. 12, 1918.

VIRGIN ISLANDS AGRICULTURAL EXPERIMENT STATION

Annual Reports

1920. p. 20-35. Wilson, C. E. Report of the entomologist.
1921. p. 12-24. Wilson, C. E. Report of the entomologist.
1922. p. 15-18. Wilson, C. E. Report of the entomologist.
1923. p. 13. Perry, W. M. Insect control.

UNITED STATES DEPARTMENT OF AGRICULTURE
VIRGIN ISLANDS AGRICULTURAL EXPERIMENT STATION

Annual Reports (Cont'd.)

1924. p. 5. Perry, W. M. Beekeeping.
p. 9-16. Perry, W. M. Report of the horticulturist [insects mentioned].
1925. p. 6-13. Perry, W. M. Report of the horticulturist [insects mentioned throughout].
1926. p. 7. Perry, W. M. [Cucumber attacked by aphid and melon worms.]

Bulletins

1. Smith, Longfield. Sea Island cotton in St. Croix. 14 p. 1921.
p. 10-14. Some diseases and pests of cotton.
2. Smith, Longfield. Sugar cane in St. Croix. 23 p. 1921.
p. 22-23. Insect pests of sugar cane.
3. Wilson, C. E. Insect pests of cotton in St. Croix. 20 p.,
illus. May, 1923.
4. Wilson, C. E. Truck-crop insect pests in the Virgin Islands
and methods of combating them. 35 p., illus. June 21, 1923.
6. Thompson, J. B. Gardening in the Virgin Islands. 19 p. May 1,
1926.
p. 6-8. Diseases and insect pests and methods of controlling
them.

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

The Federal Horticultural Board, created in 1912, is charged with the enforcement of the plant quarantine act of 1912; the act providing for Mexican border inspection and control service; the act providing for export certification; the insect pest act of 1905; and the terminal inspection act of 1915 (in cooperation with the Post Office Department).

Beginning in 1914, the decisions, notices, quarantines, regulations, etc., issued in separate form, were reprinted each month in the Service and Regulatory Announcements, indexed yearly. Since that time, therefore, the Service and Regulatory Announcements constitute a complete set of the publications of the Board, with the exception of the Annual Report and the Letter of Information.

Notice of Quarantine

(For Revisions and revocations see Indexes to Service and Regulatory Announcements)

1. White pine blister rust. Sept. 19, 1912. 1 p.
2. Mediterranean fruit fly [*Ceratitidis capitata* Wied.]. Sept. 28, 1912. 1 p. (Domestic.)
3. Potato wart. Sept. 28, 1912. 1 p. (Foreign.)
4. Gipsy moth [*Porthetria dispar* L.] and brown-tail moth [*Euproctis chrysorrhoea* L.]. Effective Nov. 25, 1912. 4 p. (Domestic.)
5. Mexican fruit fly [*Anastrepha ludens* Loew]. Jan. 22, 1913. 1 p. (Foreign.)
6. Date-palm scale insects [*Parlatoria blanchardi* Targ. and *Phoenicococcus marlatti* Ckll.]. Effective Mar. 24, 1913. 3 p. (Domestic.)
7. White pine blister rust. May 21, 1913. 1 p.
8. Pink boll worm of cotton [*Pectinophora gossypiella* Saunders]. Effective July 1, 1913. 2 p.
9. Pink boll worm of cotton. July 11, 1913. 1 p.
10. Gipsy moth and brown tail-moth. Effective Aug. 1, 1913. 5 p.

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Notice of Quarantine (Cont'd.)

11. Potato quarantine. Dec. 22, 1913. 1 p. (Foreign.)
12. Avocado seed quarantine. Feb. 27, 1914. 1 p. (On account of avocado weevil, *Heilipus lauri* Boh. [SRA 1:5]
13. Mediterranean fruit fly and melon fly [*Ceratitis capitata* Wied and *Dacus oleae* Rossi]. Apr. 21, 1914. 4 p. [SRA 2:2-5.]
14. Powdery scab of potato. Effective Aug. 1, 1914. 1 p. [SRA 3:19.]
15. Sugar cane quarantine (foreign). June 6, 1914. 1 p. [SRA 5:29.]
16. Sugar cane quarantine (domestic). June 6, 1914. 1 p. [SRA 5:29-30.]
17. Gipsy moth and brown-tail moth. Effective Aug. 1, 1914. 4 p. [SRA 6:47-49.]
18. Powdery scab of potato. Effective Nov. 16, 1914. [SRA 10:82.]
19. Citrus canker. Dec. 10, 1914. 1 p. [SRA 11:89.]
20. European pine shoot moth [*Evetria buoliana* Schiff]. Effective July 1, 1915. 1 p. [SRA 14:9.]
21. *Peronospora maydis*, disease of Indian corn. Mar. 8, 1915. 6 p. [SRA 14: 9-10.]
22. Gipsy moth and brown-tail moth. Effective July 1, 1915. 6 p. [SRA 16:39-43.]
23. Hawaiian cotton. Effective July 1, 1915. 4 p. (On account of pink boll worm, *Gelechia gossypiella* Saund.) [SRA 17:46-48.]
24. Corn disease [*Peronospora maydis*]. Effective July 1, 1916. 2 p. [SRA 27: 57-58.]
25. Gipsy moth and brown-tail moth. Effective July 1, 1916. 4 p. [SRA 28: 64-67.]
26. White pine blister rust. Effective June 1, 1917. 1 p. [SRA 39:41-42.]
27. Gipsy moth and brown-tail moth. Effective July 1, 1917. 4 p. [SRA 41: 70-74.]

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Notice of Quarantine (Cont'd.)

28. Citrus fruit quarantine. Effective Aug. 1, 1917. 5 p.
[SRA 42: 79-81.]
29. Sweet potato and yam quarantine (foreign). Effective Jan. 1, 1918.
1 p. (On account of *Cylas* spp.) [SRA 47: 144-145.]
30. Sweet potato and yam quarantine (domestic). Effective Jan. 1, 1918.
1 p. [SRA 42: 145.]
31. Banana plant quarantine (foreign). Effective Apr. 1, 1918. 1 p.
(On account of banana root borer, *Cosmopolites sordidus* Germar.) [SRA 50: 33.]
32. Banana plant quarantine (domestic). Effective Apr. 1, 1918.
1 p. [SRA 50: 34.]
33. Gipsy moth and brown-tail moth. Effective July 1, 1918. 4 p.
[SRA 52: 55-58.]
34. Bamboo quarantine. Effective Oct. 1, 1918. 1 p. (On account of
bamboo smut.) [SRA 55: 82.]
35. Quarantine on account of Japanese beetle [*Popillia japonica* Newm.].
Effective June 1, 1919. 2 p. [SRA 56: 91-92.]
36. Quarantine on account of European corn borer [*Pyrausta nubilalis* Hbn.].
Effective Oct. 1, 1918. 1 p. [SRA 56: 92-93.]
37. Nursery stock, plant and seed quarantine. Effective June 1, 1919.
14 p. [SRA 57: 101-110.]
38. Quarantine on account of black stem rust. Effective May 1, 1919.
2 p. [SRA 62: 58-59.]
39. Quarantine on account of flag smut and take all diseases. Effective
Aug. 15, 1919. 6 p. [SRA 64: 77-81.]
40. Quarantine on account of Japanese beetle. Effective April 1, 1920.
3 p. [SRA 67: 30-31.]
41. Quarantine on account of the European corn borer and other dangerous
insects and plant diseases. Feb. 21, 1920. 4 p. [SRA
67: 27.]

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Notice of Quarantine (cont'd.)

42. Quarantine against Indian corn or maize from Mexico. Feb. 21, 1920.
3 p. (On account of pink boll worm.) [SRA 67: 15-17.]
43. Quarantine on account of European corn borer. Effective Mar. 29,
1920. (Supersedes Quarantine No. 36.) 5 p. (Mimeograph)
[SRA 67: 20-23.]
44. Stocks, cuttings, scions, and buds of fruits quarantine. Effective
June 1, 1920. 2 p. [SRA 67: 33.]
45. Quarantine on account of gipsy moth and brown-tail moth. Effective
July 1, 1920. (Supersedes No. 33, revised.) 5 p. [SRA 68: 91-95.]
46. Quarantine on account of the pink bollworm. Effective Aug. 1,
1920. 1 p. [SRA 68: 81.]
47. Quarantine against Hawaiian and Porto Rican cotton, cotton seed,
and cottonseed products. Effective Aug. 15, 1920. 4 p.
(On account of pink bollworm, *Pectinophora gossypiella* Saunders,
and cotton blister mite, *Eriophyes gossypii* Banks.) [SRA 68: 87-89.]
48. Quarantine on account of Japanese beetle. Effective Oct. 1, 1920.
(Supersedes No. 40.) 4 p. [SRA 69: 128-30.]
49. Quarantine on account of the citrus black fly [*Aleurocanthus*
woglumi Ashby.] Effective Apr. 1, 1921. 4 p. [SRA 70: 79-81.]
50. Quarantine on account of Mexican bean [*Epilachna corrupta* Muls.]. beetle
Effective May 1, 1921. 4 p. [SRA 70: 75-78.]
51. The movement of sugar cane, corn, cotton, alfalfa, and fruits of
avocado and papaya from the United States to Hawaii restricted.
Effective Oct. 1, 1921. 3 p. (On account of the sugar-cane
borer, *Diatraea saccharalis* Fab., the alfalfa weevil, *Phytonomus*
posticus Gyll., the cotton boll weevil, *Anthonomus grandis*
Boh., and the papaya fruit fly, *Toxotrypana curvicauda* Gerst.)
[SRA 71: 163-165.]
52. Quarantine on account of the pink bollworm. Effective Sept. 10, 1921.
8 p. (Supersedes No. 46, as amended.) [SRA 71: 116-122, and
72: 44-53.]

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Notice of Quarantine (Cont'd)

53. Quarantine on account of ^{the} satin moth [*Stilpnotia salicis* L.].
Effective Jan. 1, 1922. 1 p. [SRA 71: 158-159.]
54. Quarantine on account of the white pine blister rust. Effective
Mar. 15, 1922. 2 p. [SRA 72: 70.]
55. Seed or paddy rice quarantine. Effective Sept. 1, 1923. 3 p.
(On account of mildew, etc.) [SRA 76: 109-111.]
56. Fruit and vegetable quarantine. Effective Nov. 1, 1923. 2 p.
[SRA 76: 111-116.]
57. Quarantine against Canadian Christmas trees and greens. Effec-
tive July 1, 1924. 2 p. (On account of gipsy moth, *Por-
thetria dispar.*) [SRA 79: 65-66.]
58. Fruit and vegetable quarantine of Porto Rico. Effective July 1,
1925. 5 p. [SRA 83: 46-49.]
59. Quarantine on account of the flag smut disease. Effective Feb. 1,
1926. 1 p. [SRA 85: 106.]
60. Hawaiian and Porto Rican quarantine covering sand, soil, or
earth, with plants. Effective Mar. 1, 1926. 1p. (On
account of *Phyllophaga* spp. (white grubs), *Phytalus* sp.,
Adoretus umbrosus Fab., var. *tenuimaculatus* Waterh. (Jap-
anese rose beetle), and several species of termites, or white
ants.) [SRA 86: 16.]
61. Quarantine on account of the *Thurberia* weevil [*Anthonomus grandis*
thurberiae Pierce]. Effective July 16, 1926. 4 p. [SRA
88: 76-79.]
62. Narcissus bulb quarantine. Effective July 15, 1926. 5 p. (On
account of *Merodon equestris*, Fab., the greater bulb fly;
Eumerus strigatus Fall., the lesser bulb fly; and *Tylenchus*
dipsaci and other eelworms.) [SRA 88: 70-74.]
63. Quarantine on account of the white pine blister rust. Effective
Oct. 1, 1926. [SRA 88: 82-87.]
64. Quarantine on account of Mexican fruit worm [*Anastrepha ludens*
Loew]. Effective Aug. 15, 1927. [SRA 92: 108-113.]

The quarantines in force are listed at the end of each number of
the Service and Regulatory Announcements.

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL HORTICULTURAL BOARD

Service and Regulatory Announcements

1-93

Jan. 1914-Dec. 1927

These announcements are issued quarterly and constitute a permanent record of the work of the Board in the enforcement of the Plant Quarantine Act of 1912 and certain related acts; including the text of quarantines and regulations thereunder, and the more important circulars and decisions explanatory of, or bearing on, such quarantines and regulations. A few of the more important items are here brought out. The Notices of Quarantine in the Service and Regulatory Announcements are entered separately (see p. 173). Complete indexes to the Announcements are published annually.

- 7. p. 51-66. Aug., 1914. List of countries maintaining nursery stock inspection. (Revised, SRA 20: 58-77, Sept., 1915; SRA 32: 103-122, Sept., 1916.)
- 16. p. 42-43. May, 1915. Stone and quarry products quarantine for gipsy moth.
- 21. p. 32-35. Sasscer, E. R. A method of fumigating baled cotton. illus. Oct., 1915.
- 26. p. 38-40. Sasscer, E. R. Directions for the disinfection of imported cotton. March, 1916.
- 27. p. 45-54. April, 1916. Nursery stock importation, rules and regulations.
- 32. p. 122-124. Althouse, R. C. Inspection of apple seeds. Sept., 1916.
- 37. p. 10-11. Feb., 1917. Marlatt, C. L. Importation of burlap or other fabric which has been used for wrapping cotton.
- 39. p. 37-38. April, 1917. Entry ports for cotton, burlap, etc.
- 41. p. 58. June, 1917. Pink boll worm situation in Mexico.
- p. 66-68. Appropriation requested for cotton-free zone against pink boll worm.
- 57. p. 110-111. Oct.-Nov., 1918. Plant imports from Holland. [Risk of insects coming in, e.g., *Notolophus antiqua* L. (European tussock moth).]
- 59. p. 2. Jan., 1919. Aeroplane to locate cotton fields in swampy districts.
- 68. p. 52-59. May-July, 1920. Pink boll worm.
- 72. p. 23-44. Jan.-June, 1922. Quarantine 37-circular letters.
- p. 64-68. Jan.-June, 1922. Puckett, F. S. Report of the cleaning of cotton fields in the eradication of the pink boll worm, 1917-1921, inclusive.
- p. 80-81. Jan.-June, 1922. Certain railroad rights of way and railroad yards in Cuba to be kept free of host plants of the citrus black fly [*Aleurocanthus woglumi* Ashby].
- 74. p. 28-29. Jan.-March, 1923. Broom corn disinfection.
- p. 37-39. Jan.-March, 1923. Hydrocyanic acid gas fumigation of cotton and cotton wrappings as condition of entry.

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Service and Regulatory Announcements (Cont'd.)

77. p. 160-162. Oct.-Dec., 1923. Marlatt, C. L. Spanish grapes infested with Mediterranean fruit fly.
77. Supplement. Annual letter of information No. 37. Oct., 1924. p. 175-222. Pests collected from imported plants and plant products.
78. p. 67-73. Jan.-March, 1924. Quarantine powers, limitations.
80. p. 103. July-Sept., 1924. Mail importations of plants—treatment.
82. p. 18-20. Jan.-March, 1925. Fruit fly surveys in Spain, Portugal, and Italy.
- p. 20. Garbage from foreign vessels to be safeguarded.
83. p. 53-54. April-June, 1925. Marlatt, C. L. Distribution of the Oriental fruit moth [*Laspeyresia molesta* Busck,] in the United States in 1924.
86. p. 22-24. Jan.-March, 1926. Federal plant quarantine act of August 20, 1912. Purpose and powers of the act.
91. p. 78-79. April-June, 1927. Bulb-fly [*Merodon equestris* Fab.] hot-water treatment.
93. p. 142-144. Oct.-Dec., 1927. Fruit-fly investigation and America's quarantine upon Spanish agricultural products.

Publications

Annual letter of information, nos. 1-39. Dec. 2, 1914 - Dec. 31, 1927. Nos. 1-16 are mimeographed. Nos. 1-18 have title: News letter; nos. 19-24 have title: Letter of information; nos. 25-33 have title: Quarterly bulletin of information; nos. 37-39 are Service and regulatory announcements no. 77 (supplement), no. 85 (supplement), and no. 89 (supplement). Indexes published annually.

List of current quarantine and other restrictive orders and miscellaneous regulations. June 1, 1926. 6 p. [For earlier lists see Service and regulatory announcements nos. 27-85.]

Monthly letter of information v.1, nos. 1 to 12, July 1, 1924 - June 15, 1925.

Plant quarantine decisions Nos. 1-12, 1913-1917. No more published. Nos. 6-11 typed; no. 5-12 also in Service and regulatory announcements nos. 1, 2, 10, 24, 25, 30, 31, 34. These decisions are in effect amendments to the rules and regulations for enforcing the plant quarantine act and the various quarantines.

UNITED STATES DEPARTMENT OF AGRICULTURE

FEDERAL HORTICULTURAL BOARD

Publications (Cont'd)

Reports, 1913-1927. 1913-1920, 1922-1923, from the Annual reports of the Department of Agriculture; also published separately.

Rules and regulations under the plant quarantine act: General, including nursery stock. 11 p. 1914. (For earlier editions see U. S. Department of Agriculture, Office of the Secretary, Circulars 41 and 44.)

--- Amendments 1-10 (in Service and Regulatory announcements. See Annual indexes).

Rules and regulations governing the importation of nursery stock into the United States, effective on and after July, 1, 1916. 10 p. 1916.

FOOD, DRUG AND INSECTICIDE ADMINISTRATION

Created July 1, 1927. The regulatory work formerly carried on by the Bureau of Chemistry has been combined with the regulatory work in the Insecticide and Fungicide Board, and all is administered by the Food, Drug and Insecticide Administration.

Food, Drug and Insecticide Review, v.2, no. 2-v.12, no. 3. April, 1913 - March, 1928. Takes the place of the clearing house letter and the monthly summary of regulatory work (See v.2, no. 4, note). V. 2, no. 2 - v.5, no. 8, are Monthly Review of the Bureau of Chemistry; v. 5, no. 9-10 not published; v.2, no. 2 - v.12, no. 2, have title: Food and Drug Review.

Notices of judgment under the Food and Drugs act, No. 1-15250, May, 1908-Dec., 1927. Nos. 1-122, May 2, 1908 - Dec. 21, 1909, issued by the Office of the Secretary, Board of Food and Drug Inspection; nos. 123-2762, Jan. 25, 1910 - March 5, 1914, issued by the Office of the Secretary; nos. 2763-15000, March 5, 1914 - June, 1927, issued by the Bureau of Chemistry. Nos. 2986-15000, Aug. 3, 1914 - June, 1927, issued as Supplement to the Service and Regulatory announcements of the Bureau of Chemistry. Beginning with no. 3501, April 3, 1915, Supplements are numbered consecutively; Service and Regulatory Announcements, Chemistry, Supplements 1-230. The Bureau of Chemistry issued an index to the Notices of Judgment 1-10000 in 1922, and indexes for each succeeding 1000 judgments are still issued.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Created in 1881 as Division of Forestry. Became Bureau of Forestry, July 1, 1901, and Forest Service in 1905.

- Bulletins
(Series discontinued)
- 1887-1913
- 1-127
13. Mohr, Charles. Timber pines of the southern United States. With a discussion of the structure of their wood, by Filibert Roth. 160 p., illus. 1896. (Rev. ed. 176 p., illus., Sept. 1897.) p. 63. Insects injurious to long leaf pine trees.
19. Simpson, J. M. Osier culture. 27 p. 1898.
p. 21-22. Notes on insect enemies. (Prepared under the supervision of the Division of Entomology.)
22. Spalding, V. M. The white pine (*Pinus strobus* Linnaeus)...rev. and enl. by B. E. Fernow ... 185 p., illus. 1899.
p. 55-61. Chittenden, F. H. Insect enemies of the white pine.
26. Graves, H. S. Practical forestry in the Adirondacks. 85 p., illus. 1899.
p. 56. Insects.
31. Mohr, Charles. Notes on the red cedar. 37 p., illus. 1901.
p. 26-27. Insects.
33. Allen, E. T. The western hemlock. 56 p., illus. 1902.
p. 16-21. Hopkins, A. D. Insects.
38. The redwood. 40 p., illus. 1903.
Part III. p. 32-40. Hopkins, A. D. Insect enemies of the redwood.
46. Hubbard, W. F. The basket willow. With a chapter on Insects injurious to the basket willow, by F. H. Chittenden, p. 63-80, illus. 1904.
59. Fox, W. F., and Hubbard, W. F. The maple sugar industry. 55 p., illus. 1905.
p. 21-23. Banks, N. "Maple worm." [*Malacosoma disstria* Hbn.]
66. Kellog, R. S. Forest belts of western Kansas and Nebraska. 44 p., illus. 1905.
p. 20-21. Enemies.
85. Plummer, F. G. Chaparral. 48 p., illus.
p. 38-39. Bee pasturage.

- Circulars
(Series discontinued)
- 1886-1913
- 1-216
41. Spring, S. N. Forest planting on coal lands in western Pennsylvania. 160 p. 1906.
p. 10-13. Insects an obstacle to planting.
64. Black locust (*Robinia pseudacacia*). 4 p. Jan. 19, 1907. (Rev. Sept. 30, 1907; Feb. 15, 1909.)
p. 2. The locust borer [*Cyllene robiniae* Forst.]
70. European larch (*Larix europaea*). 3 p. Jan. 18, 1907. (Rev. Aug. 6, 1909.)
p. 2. Sawfly.
135. Foster, H. D., and Ashe, W. W. Chestnut oak in the southern Appalachians. 23 p. Aug. 31, 1908.
p. 21. Insects [*Eupsalis minuta* Dru. and *Prionoxystus robiniae* Peck].

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Circulars (Continued)

163. Dana, S.T. Paper birch in the Northeast. 37 p. illus., July 7, 1909.
p. 21. Susceptibility to injury [from *Agrilus anxius* Gory and *Xylococcus betulae* Perg].
187. Hatch, C.F. Manufacture and utilization of hickory. 16 p., illus.
Nov. 16, 1911.
p. 12-13. Damage by insects.
192. Weiss, H.F., and Barnum, C. T. The prevention of sap stain in lumber.
19 p., illus. Nov. 23, 1911.
p. 15-16. Insect attacks.
215. Brown, H. P. Pith-ray flecks in wood. 15 p., illus. May 7, 1913.
p. 6-14. [Made by the larva of a dipterous insect, the cambium miner, *Agromyza pruinosa* Coq.]

Report on Forestry

- Hough, F.B. Report upon forestry . . . prepared under the direction of the Commissioner of Agriculture in pursuance of an act of Congress approved Aug. 15, 1876. 650 p. 1878.
p. 51. Insects [*Acarus*] injuring trees in Paris.
p. 110. Sawfly [*Nematus ventralis* Say] on willows.
p. 161-170. Insect ravages.
p. 280-281. Screens of woodland a barrier against progress of insects.
- Hough, F.B. Report upon forestry. v.2. 618 p. 1880.
p. 63. Damages from insect ravages.
- Hough, F. B. Report on forestry. v. 3. 318 p. 1882.
p. 242-245. Liability of scorched pine timber to the attack of insects.
p. 259-274. Insect ravages.
- Egleston, N. H. Report on forestry. v.4. 421 p., illus. 1884.
Insect injuries notes as follows:
p. 13-15. Brookings County, Dakota.
p. 25-28. Brown County, Illinois.
p. 44-55. Adair County, Iowa.
p. 65-71. Allen County, Kansas.
p. 81-84. Becker County, Minnesota.
p. 95-99. Adams County, Nebraska.

Press Bulletins

23. Timber damages by insects. 1.p. Nov. 4, 1902. (Note on trip of A. D. Hopkins.)
147. Good timber sold cheap. To check ravages of Black Hills beetle purchasers of infested timber are sought by Forest Service. 1 p. Jan. 19, 1907.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Use Book

Use Book. Regulations and instructions for the use of the national forest reserves. 208 p. July 1, 1906.

p.60-61. Disposal of insect-infested timber.

Use book...248 p. June 14, 1907.

p.55. Disposal of insect-infested timber.

Use book...Administrative edition. 341 p. July 1, 1908.

p.69-70. Damage from insects reported to forester.

Use book. A manual for users of the national forests. 160 p. Aug. 4, 1915.

p.29. Protection against forest insects.

Use book. 168 p. Apr. 26, 1918.

p.51. Protection against forest insects.

Use book. A manual of information about national forests.

Grazing section. 96 p. 1896.

National forest manual. Instructions to forestry officers relating to forest plans, forest extension. 45 p. 1911.

p.29-30. Insect infestations.

National forest manual. Regulations of the Secretary of Agriculture and instructions to forest officers relating to and governing timber sales. 90 p. 1911.

p. 38, 44, 49, 62. Insect infested timber; disposal.

The Forest Worker

Forest worker [bi-monthly]. From Sept., 1924, to Nov., 1927, mimeographed. From Jan., 1927 (v.3, no. 1,) to date, printed. Contains frequent contributions from Forest Insects Division, Bureau of Entomology.

v.3. No. 1, p. 9. Carter, E. E. The kaibab bug [*Dendroctonus ponderosae* Hopk.] epidemic is over. Jan., 1927.

No. 1, p. 15. *Dendroctonus monticolae* Hopk.

No. 3, p. 16. Loss from bark beetles [*Dendroctonus brevicornis* Hec]. May, 1927.

No. 3, p. 18. Aeroplane dusting - oak forests - with arsenic.

No. 4, p. 12. Craighead, F. C. The turpentine borer [*Euprestis apicans* Hbst.] in the Florida National Forest. July, 1927.

No. 4, p. 17. Aeroplane and pine moths - France.

No. 5, p.12-13. Snyder, T. E. Preventing termite damage to buildings. Sept., 1927.

No. 6, p.13, Balch, R. E. Dying oaks in the Southern Appalachians. Nov., 1927.

No. 6, p.15, Termite protection and building code. Nov., 1927.

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF INFORMATION

Radio Farm School

Dairy short course no. 7. Diseases of cattle. Mar. 25, 1927, to May 13, 1927. 25 p.
Lesson no. 6. Bishopp, F. C. Warbles, lice and flies, p. 13-18.
Live stock short course no. 3. Animal health and sanitation. Nov. 29, 1926, to Jan. 17, 1927. 20 p.
Lesson no. 8. Chapin, R. M. Dips and disinfectants, p. 17-20.
Poultry short course no. 2. Jull, M. A. Poultry houses. Oct. 6 - Nov. 24, 1926. 17 p.
p. 11-13. Cleaning and disinfecting houses.

Press Service

Clip sheet weekly, no. 1-495, May 27, 1918 - Dec. 21, 1927.
Title varies; no. 1-5, May 27, 1918 - June 24, 1918, Agricultural war work; no. 6-26, July 1, 1918 - Nov. 18, 1918, What the Department of Agriculture is doing, War work weekly; no. 27-147, Nov. 25, 1918 - May 14, 1921, What the Department of Agriculture is doing - Food and farming weekly. [For the use of newspaper officials only.]
Examples:

- 194. Scientists seek parasites of two destructive moths. New corn pest invades this country from Mexico. Mar. 13, 1922.
- 197. Experts go to discover how borers cross Lake Erie. April 3, 1922.
- 198. War gases proposed for destroying noxious pests. April 10, 1922.

INSECTICIDE AND FUNGICIDE BOARD.

Created in 1910; ceased to exist June 3, 1927, the work then being transferred to the Food, Drug, and Insecticide Administration.

Notice of insecticide act Judgments 1 - 72 [including fungicides].
July 19, 1912 - Feb. 5, 1914. Continued in Service and regulatory announcements (S R A) no. 1 - 58, March 16, 1914 - July, 1927; no. 73 - 1100.

Reports 1912 - 1926/1927. 1912-1920, 1922-1923, from Annual reports of the U. S. Department of Agriculture; also published separately.
1912 by Dorset, M., Waite, M. B., Quaintance, A. L., and Haywood, J. K.
1913-1914 by J. K. Haywood.
1915 by Haywood, J. K., Waite, M. B., Quaintance, A. L., and Emery, J. A.
1916-1927 by J. K. Haywood.

UNITED STATES DEPARTMENT OF AGRICULTURE

INSECTICIDE AND FUNGICIDE BOARD

Service and regulatory announcements no. 1 - 58 (S R A 1 - 58) Feb., 1914 - July, 1927.

Contains Insecticide decisions and Notices of judgment under the Insecticide act, formerly issued as separate publications, now published in the latter form only.

Insecticide decisions 1 - 6, Aug., 1911 - Feb. 12, 1912.

LIBRARY

Bulletins

9. List of publications of the United States Department of Agriculture from 1841 to June 30, 1895, inclusive. 76 p. 1896.
p. 37-42. Division of Entomology.
55. Catalogue of publications relating to entomology in the Library of the U. S. Department of Agriculture, prepared under the direction of the librarian. 562 p. 1906.
- 1-20 Bibliographical Contributions 1919 - 1928
11. List of manuscript bibliographies and indexes in the U. S. Department of Agriculture, including serial monographed lists of current literature, compiled by E. Lucy Ogden and Emma B. Hawks. 36 numb. leaves [This list is a revision of one compiled by the library in 1918: Bibliographic work, special indexes, directories and lists of publications in progress: Library notes no. 6.]
p. 11 - 15. Entomology.

BUREAU OF MARKETS

Consolidated July 1, 1921, with the Bureau of Crop Estimates (so named July 1, 1914; formerly Bureau of Statistics), under the name Bureau of Markets and Crop Estimates.

Crop Reporter, v.6, no. 12, Apr., 1905. p. 100. Control of the boll weevil. (Reprinted from Farmers' Bulletin No. 216.)

Seed Reporter, v.2, no. 1, July, 1918. p. 6, Back, E. A. Protect seeds with carbon disulphid.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PLANT INDUSTRY

Organized July 1, 1901, by the consolidation of the following divisions of the Department of Agriculture: Agrostology Division; Botany Division; Seed and Plant Introductions; Seed Division; Vegetable Physiology and Pathology Division. After July, 1913, the publications of the Bureau of Plant Industry were discontinued as a series, save for a few unnumbered publications and popular circulars issued from 1902 to 1918.

1 - 285 - Bulletins 1901-1913
(Series discontinued)

34. Oliver, G. W. Silkworm food plants: Cultivation and propagation. 18 p., illus. Jan. 15, 1903.
88. Cook, O. F. Weevil-resisting adaptations of the cotton plant. 87 p., illus. Jan. 13, 1906.
100. Miscellaneous papers: I. Shear, C. L. Cranberry spraying experiments in 1905. p. 7-12. Apr. 25, 1907.
119. Oliver, G. W. The mulberry and other silkworm food plants. 22 p., illus. Dec. 31, 1907.
122. Townsend, C. O. Curly-top, a disease of the sugar beet. 37 p., illus. Apr. 25, 1908.
p. 17. Insects [Eutettix].
124. Griffiths, David. The prickly pear as a farm crop. 37 p., illus. Feb. 19, 1908.
p. 28-30. Enemies of the prickly pear; Red spider [Tetranychus opuntiae Banks].
128. Kearney, T. H., and Peterson, W. A. Egyptian cotton in the southwestern United States. 71 p., illus. June 13, 1908.
p. 2-59. The boll weevil [damage and loss from].
145. Cook, O. F. Vegetation affected by agriculture in Central America. 30 p., illus. April 10, 1909.
p. 13-15. Previous denudations shown by absence of humus inhabiting arthropods.
155. Shear, C. L., Miles, G. F., and Hawkins, L. A. The control of black-rot of the grape. 42 p., illus. Aug. 30, 1909.
p. 14, 17, 35-36. Control of insects by addition of arsenate of lead to sprays.
166. Bray, W. L. The mistletoe pest in the Southwest. 39 p., illus. Feb. 2, 1910.
p. 11. Insect pollination of Viscum album.
172. Husmann, G. C. Grape investigations in the vinifera regions of the United States with reference to resistant stocks, direct producers and viniferas. 86 p., illus. Aug. 25, 1910.
p. 10-11, 13-16. Phylloxera in California and in Europe.
174. Scott, W. M., and Ayres, T. W. The control of peach brown rot and scab. 71 p., illus. March 2, 1910.
p. 31. Influence of insects.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PLANT INDUSTRY

Bulletins (Cont'd.)

181. Shaw, H.B. The curly-top of beets. 46 p., illus. July 13, 1910.
p. 22-24. Description of the beet leaf-hopper.
p. 35-36. Control experiments for *Eutettix tenellus* [Baker].
183. Hedgcock, G.G. Field studies of the crown gall of the grape. 40 p.,
illus. July 23, 1910.
p. 20. [Insects; cause; authorities.]
193. Coville, F. V. Experiments in blueberry culture. 100 p., illus.
Nov. 15, 1910.
p. 33. Insect larvae hastening decay of leaves.
p. 76-78, 82. Pollen carrying insects.
p. 79-80. Insects injurious to blueberry.
203. Ball, C.R. The importance and improvement of the grain sorghums.
45 p., illus. Jan. 20, 1911.
p. 31. Cornworms and false armyworm [*Laphygma frugiperda* S. & A.].
210. Cook, O. F. Hindi cotton in Egypt. 58 p., illus. May 11, 1911.
p. 8, 11. Relation of insects (wild bees) to deterioration
of cotton.
220. Cook, O.F. Relation of drought to weevil resistance in cotton.
30 p. Aug. 7, 1911.
228. Johnston, J.R. The history and cause of the coconut bud rot.
173 p., illus. Feb. 5, 1912. (Investigations made by August Busck
for insect injury; None found.)
229. Piper, C.V. Agricultural varieties of the cowpea and immediately
related species. 160 p., illus. Feb. 29, 1912.
p. 25-27, 32. The cowpea flower and its pollination by bumble-
bees.
237. Ball, C.R., and Hastings, S.H. Grain-sorghum production in the
San Antonio region of Texas. 30 p. Jan. 31, 1912.
p. 18-25. Experiments in midge evasion.
263. Norton, J. B. Methods used in breeding asparagus for rust resistance.
60 p., illus. Jan. 13, 1913.
p. 28-29. Pollination by bees.
p. 58. Protection from beetles: *Crioceris 12-punctatus* [L.] and
C. asparagi [L.].
265. Hawkins, L.A. Some factors influencing the efficiency of Bordeaux
mixture. 29 p. illus. Dec. 16, 1912.
267. McKee, Roland, and Ricker, P.L. Nonperennial medicagos: The agro-
nomic value and botanical relationships of the species, 33 p.,
illus. Feb. 21, 1913.
p. 19. Insect enemies [*Bruchophagus funebris* How.].

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PLANT INDUSTRY

Bulletins (Cont'd)

273. Husmann, G. C., and Dearing, Charles. The muscadine grapes. 64 p., illus. May 5, 1913.
p. 40-43. Insects and diseases.
p. 40. [*Haltica chalybea*. Ill.]
p. 43. [*Copidita thoracica*. Fab.]
277. Bunzel, Herbert. Biochemical study of curly-top of sugar beets. 28 p. March 19, 1913.

1 - 132 1 - 173 Circulars 1908 - 1913
(Series discontinued)

1. Scott, W. M. Self-boiled lime sulphur mixture as a promising fungicide. 18 p. 1908. (Ed 2. Aug. 22, 1908. 18 p.)
4. Spaulding, P. The treatment of damping-off in coniferous seedlings. 8 p. 1908.
p. 6-7. Copper sulphate and lime mixture.
13. Headley, F. B., and Hastrup, S. H. The work of the San Antonio experiment farm in 1907. 16 p. Sept., 1908.
p. 9. [*Contarinia sorghicola* Coq. causes sterility.]
p. 14. Acclimatization of weevil-resisting types of cotton.
24. Brand, C. J., and Westgate, J. M. Alfalfa in cultivated rows for seed production in semi-arid regions. 23 p. March, 1909.
p. 8-10. The relation of insects to the setting of alfalfa seed.
27. Scott, W. M. Lime-sulphur mixtures for the summer spraying of orchards. 17 p. April, 1909.
29. Kearney, T. H., and Paterson, W. A. Experiments with Egyptian cotton in 1908. 22 p. April, 1909.
p. 16-18. Diseases and insect enemies.
35. Spaulding, P. The present status of the white pine blights. 12 p. Aug. 23, 1909.
p. 9-10. [Twig-blight caused by insects.]
41. Fairchild, David, and Collins, G. M. The South African pipe calabash. 9 p., illus. Dec., 1909.
p. 5-6. Diseases and insect enemies.
54. Scott, W. M. The substitution of lime-sulphur preparations for Bordeaux mixture in the treatment of apple diseases. 15 p., illus. 1910.
58. Waite, M. B. Experiments on the apple with some new and little known fungicides. 19 p. 1910.
65. Hawkins, L. A. Grape-spraying experiments in Michigan in 1909. 15 p., illus. 1910.
p. 11. Climbing cutworms.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PLANT INDUSTRY

Circulars (Cont'd.)

118. Miscellaneous papers: C. Headley, F. B., and Fulkerson, Vincent.
Fruit growing on the Truckee-Carson project. p. 17-28, 1913.
p. 27-28. Insects.
129. Miscellaneous papers: B. Spaulding, Percy. The present status
of the white-pine blister rust. p. 9-20. 1913.
p. 10-11. [Attack of *Chermes pinicorticis* Fitch confused with
blister rust.]
130. Miscellaneous papers: A. Cook, O. F. Cotton problems in Louisiana.
p. 1-14, 1913.
p. 8. Relation of Louisiana conditions to boll weevil injury.
p. 8-9. Measures of protection against the boll weevil.
132. Miscellaneous papers: B. Cook, O. F. Cotton farming in the
Southwest. p. 9-18, 1913. [Boll weevil mentioned.]

Documents

619. Knapp, S. A. Mexican cotton boll weevils. Production of
cotton under boll weevil conditions. 8 p. June, 1911.
1130. Cook, O. F. Single stalk cotton culture. 11 p., illus. Dec., 1914.
p. 8. Boll weevil.

Dry Land Agriculture Circulars

4. Care of cooperative shelter belts on the northern great plains.
5 p. April, 1919.
p. 3-4. Insect pests. [Poplar beetles, leaf-cutter bees.]

Western Irrigation Agriculture Circulars

22. Hansen, Dan. The work of the Huntley reclamation project
experiment farm in 1917. 29 p. 1918.
p. 19-20. Test for control of the sugar beet root louse
[*Pemphigus Betae* Doane].
25. Blair, R. E. The work of the Yuma reclamation project ex-
periment station farm in 1917. 45 p. Dec., 1918.
p. 12-14. Diseases and pests.
26. Allen, R. W. The work of the Umatilla reclamation project
experiment farm in 1917. 30 p., illus. Jan., 1919.
p. 7. Insect pests. [Grasshoppers, codling moths (*Carpocapsa*
pomonella L.), wooly aphis (*Eriosoma lanigerum* Hausm.).]
27. Holden J. A. The work of the Scotts Bluff reclamation project
experiment farm in 1917. 28 p. Dec., 1918.
p. 12. Insects. [Grasshoppers.]

UNITED STATES DEPARTMENT OF AGRICULTURE

DIVISION OF POMOLOGY

Organized July 1, 1886; this division was merged with the Bureau of Plant Industry July 1, 1901.

Bulletins

5. Eisen, Gustav, and Earle, F. S. Fig culture... 32 p. 1897.
p. 26-27. Insect enemies and diseases [*Ptychodes vittatus* Fab. ;
Heterodera radiculicola].
9. Eisen, Gustav. The fig; its history, culture and curing... with
a descriptive catalogue of the known varieties of figs. 317 p.,
illus. 1901.
p. 105-110. Fig insects. [*Blastophaga grossorum* Grav.]

Unnumbered Publications

- Corsa, W. P., comp. Nut culture in the United States, embracing
native and introduced species. 144 p., illus. 1896.
p. 24-25. Insects, diseases, and remedies [for red spider].

DIVISION OF PUBLICATIONS

The first report of the editor appeared in the annual report of the department for 1868; Division of Records and Editing created July 1, 1889; name changed to Division of Publications July 1, 1894; changed to Office of Publications July 1, 1923; became a part of the Office of Information July 1, 1924.

1 - 10

Bulletins
(Series discontinued)

1893-1913

1. Thompson, G. F., comp. Index to Annual Reports of the U. S. Department of Agriculture for the years 1837 to 1893, inclusive. 252 p. 1896.
p. 16-19. Division of Entomology.
3. Greathouse, C. H., comp. Historical sketch of the U. S. Department of Agriculture; its objects and present organization. 74 p., illus.
p. 35. Division of Entomology. (Rev. 1898; 2d rev. 1907. 97 p.)
4. Thompson, G. F. Index to authors, with titles of their publications, appearing in documents of the U. S. Dept. of Agriculture, 1841-1897. 503 p. 1898.
5. Thompson, G. F. Index to literature relating to animal industry in the publications of the U. S. Dept. of Agriculture, 1837-1898. 676 p. 1900.
6. Handy, R. B., and Cannon, M. B. List by titles of publications of the U. S. Dept. of Agriculture from 1840 to June, 1901, inclusive. 216 p. 1902.

UNITED STATES DEPARTMENT OF AGRICULTURE

DIVISION OF PUBLICATIONS

Circulars

1. Organization of Dept. of Agriculture, 1901-1902. 20 p. 1901.
p. 18. Division of entomology. (Rev. Sept. 1, 1903;
Sept. 1, 1904; Oct. 1, 1905; Jan. 1, 1907; Jan. 1,
1908; June 10, 1908; Feb. 15, 1909; July 1, 1910;
July 1, 1911; July 1, 1912.)
2. Publications for free distribution. Rev. to Oct. 1, 1906.
48 p.
p. 29-31. Bureau of Entomology. (Rev. to Jan. 15, 1907;
July 1, 1907; Dec. 15, 1907; June 10, 1908; Sept. 1, 1908;
Mar. 1, 1909; Oct. 15, 1909; Apr. 1, 1910; June 15, 1910.)
16. Publications of the Bureau of Entomology. 9 p. March 15, 1911.
(Rev. May 24, 1911; Oct. 7, 1911; Dec. 27, 1911; Mar.
15, 1912; Oct. 24, 1912; Jan. 30, 1913; June 26, 1913;
July 23, 1913.)

OFFICE OF THE SOLICITOR

Circulars

66. The plant quarantine act. Decision of the District Court for
the Southern District of New York in a case involving a
violation of the plant quarantine act of August 20, 1912.
(37 Stat. 315.) 3 p. Dec. 13, 1912.

Unnumbered Publications

Laws applicable to the United States Department of Agriculture.
Comp. by O. H. Gates. 255 p. May 5, 1908.
p. 178-181. Bureau of Entomology.

First supplement, embracing statutes and parts of statutes
applicable to the United States Department of Agriculture,
enacted from August 28, 1912, to March 4, 1913, inclusive.
61 p. 1913.

Second supplement, from August 28, 1912, to October 24, 1914.
128 p. Feb. 15, 1915.

Third supplement, from Oct. 25, 1914, to March 4, 1915. 71 p.
July 6, 1915.

Fourth supplement, from Dec. 6, 1915, to Sept. 8, 1916. 137 p.

Laws applicable to the United States Department of Agriculture,
1923. Embracing acts and provisions of a permanent or not
plainly temporary character in force at the close of the
fourth session of the 67th Congress, March 4, 1923.
897 p. 1924.

Index to legislative history of acts of Congress involving the
United States Department of Agriculture. 53 p. 1912.
Comp. by O. H. Gates.

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF THE SOLICITOR

Unnumbered Publications (Cont'd.)

- Caffey, F. G. A brief statutory history of the United States Department of Agriculture. 26 p. Oct. 23, 1916.
p. 13. Bureau of Entomology.
- The national forest manual. General laws, parts of laws, decisions and opinions applicable to the creation, administration and protection of national forests. 97 p. 1913.

STATES RELATIONS SERVICE

Organized July 1, 1915, this service included the following offices: (1) Office of the Director; (2) Office of Experiment Stations; (3) Office of Extension Work; (4) Office of Home Economics. On July 1, 1923, States Relations Service ceased to exist, its several offices having new relations to the work of the department.

Documents

36. Methods of growing cotton under boll weevil conditions. 8 p. Feb. 9, 1917.
52. Boys' and Girls' club work: Home gardens. Insects and diseases of vegetables and how to combat them. By C. P. Close. 10 p. 1917.
56. Boys' and Girls' club work. Common poultry diseases. 7 p. illus. 1917. (Prepared in the Bureau of Animal Industry.) [Also issued as U. S. Dept. Agr. Cir. 20.]
95. Insect enemies and diseases of the tomato. 18 p., illus. 1919.
Insects injurious to the tomato, by F.H. Chittenden; Tomato diseases, by W. A. Orton. [Also issued as U. S. Dept. Agr. Cir. 40.]
98. Beattie, W. R. Boys' and Girls' club work: Tomato growing for club work. 14 p., illus. March 6, 1919. (U.S. Dept. of Agriculture in coop. with State Agricultural Colleges.)
p. 11-12. Insects injurious to tomatoes.

How Teachers may use Farmers' Bulletins.

- How teachers in rural elementary schools may use Farmers' bulletin 868: How to increase the potato crops by spraying. 2 p. Dec. 10, 1917.
- How teachers in elementary schools may use publications on the control of disease and insect enemies of the home garden. By Alvin Dille. 4 p. Sept. 1919. [Also issued as U. S. Dept. Agr. Dept. Cir. 63.]

Syllabuses

22. Illustrated lecture on cattle-tick eradication. 14 p. 1916.

UNITED STATES DEPARTMENT OF AGRICULTURE

DIVISION OF STATISTICS

Established 1863, the Division of Statistics became the Bureau of Statistics on July 1, 1903; July 1, 1914, the name was changed to Bureau of Crop Estimates.

Miscellaneous series, Bulletin

6. Austin, Amory, and Whitney, M. Rice: Its cultivation, production and distribution in the United States and foreign countries, by Amory Austin, with a chapter on the Rice soils of South Carolina, by Milton Whitney. 89 p. 1893.
p. 31-37. Diseases and enemies of rice.

Monthly Crop Reporter

- v. 2, no. 7, July, 1916. p. 65. Honey bees. Honey yields and prospects.
v. 7, no. 3, March, 1921. p. 33. Green bug [*Toxoptera graminum* Rond.] and Hessian fly [*Phytophaga destructor* Say] damage to wheat.
v. 7, no. 5, May, 1921. p. 57. Honey bee report.
v. 7, no. 6, July, 1921. p. 81. Bees, honey plants, and honey.
v. 7, no. 8, Aug. 5, 1921. p. 98. Cause and extent of cotton damage. Percentage and loss due to boll weevil [*Anthonomus grandis* Beh.].
v. 7, no. 9, Sept. 1, 1921. p. 113. Honey bees and honey plants.

DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY

This Division was organized July 1, 1885, as the Mycological Section of the Division of Botany; 1887-1889 the name was Section of Vegetable Pathology; 1890-1894, Division of Vegetable Pathology and Physiology; Merged July 1, 1901, in the Bureau of Plant Industry.

Bulletins

2. Pierce, N.B. The California vine disease. 22 p., illus. 1892.
p. 97. [*Phylloxera* mentioned.]
p. 174-179. Animal parasitic diseases.
5. Waite, M. B. The pollination of pear flowers. 88 p., illus. 1894.
p. 79-80. Insect visitors.
6. Fairchild, D.G. Bordeaux mixture as a fungicide. 55 p. 1894.
9. Swingle, W. T. Bordeaux mixture, its chemistry, physical properties and toxic effects on fungi and algae. 37 p. 1896.
13. Webber, H.J. Sooty mold of the orange and its treatment. 54 p., illus. 1897. (Nourished on the honeydew of scale insects.)

UNITED STATES DEPARTMENT OF AGRICULTURE
DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY

Bulletins (Cont'd.)

14. Woods, A.F. The Bermuda lily disease: A preliminary report of investigations. 15 p., illus. 1897.
p. 11-13. Insect and fungous parasites.
19. Woods, A.F. Stigmonose: A disease of carnations and other pinks. 29 p., illus. 1900.
p. 18-20. First colonization experiments with aphides.

Circulars

17. Galloway, B.T. New spraying devices. 4 p. Apr. 5, 1899.

WEATHER BUREAU

Transferred from the War Department to the Department of Agriculture Oct. 1, 1890.

Bulletins

33. Garriott, E.B. Weather folk lore and local weather signs. 153 p. 1903.
p. 24. Insects.

Monthly Weather Review

- V. 45, no. 1, p. 11. Hurd, W.E. Grasshoppers at sea. Jan., 1917.
- Supp. 9. Hopkins, A.D. Periodical events and natural law as a guide to agricultural research and practice. 42 p., illus. Jan. 16, 1918. (Issued May 1.)
- v.46, no.2, p.73. Kenoyer, L.A. Weather and honey production. Feb., 1918. (From Experiment Station Record, v.37, p. 654, 1917.)
- v. 47, no.2, p.110-111. Hurd, W.E. Weather control of the periodical cicada[Tibicina septendecim L.]. Feb., 1919.
- v.47, no.7, p.494-495. Pierce, W.D. A new interpretation of the relationships of temperature and humidity to insect development. July, 1919.

UNITED STATES DEPARTMENT OF AGRICULTURE

WEATHER BUREAU

Monthly Weather Review (Cont'd.)

- v.48, no.2, p.94-98. Hurd, W.E. Influence of the wind on the movement of insects. Feb., 1920.
- v.48, no.2, p.98. Yothers, W.W. Effect of a Florida freeze on insects. Feb., 1920.
- v.48, no.12, p.691-692. Macdonald, Angus. Relation of malaria to temperature. Dec., 1920. (Reprinted from Meteorological Magazine, London, Nov., 1920, p.255-256)
- v.49, no.1, p. 28. Weather and the opening of cocoons, Jan., 1921. (From Scientific American Monthly, Jan., 1921, p.15)
- v.49, no. 1, p.28. Cameron, A.E. The relation of soil insects to climatic conditions. Jan., 1921.
- v.53, no. 2, p.70-71. Calvert, E.B. Fruit spray and harvest-weather forecast work of the Weather Bureau in New York State. Feb., 1925.

ABBREVIATIONS USED IN THE SUBJECT INDEX

Alaska R.-----	Alaska Agricultural Experiment Station. Report.
BAE Mkt. News Serv. Semi-Mo. Rpt.-----	Bureau of Agricultural Economics. Market News Service. Semi-Monthly Report.
BAE Unnumb. Pub. -----	Bureau of Agricultural Economics. Unnumbered publications.
BAI Bul. -----	Bureau of Animal Industry. Bulletin.
BAI Circ.-----	Bureau of Animal Industry. Circular.
BAI Doc. A -----	Bureau of Animal Industry. Document A.
BAI Press Bul. -----	Bureau of Animal Industry. Press Bulletin.
BAI Rpt. -----	Bureau of Animal Industry. Report.
BAI SRA -----	Bureau of Animal Industry. Service and Regulatory Announcements.
BAI Unnumb. Pub. -----	Bureau of Animal Industry. Unnumbered publications.
Biol. Surv. B. -----	Biological Survey. Bulletin.
Biol. Surv. C. -----	Biological Survey. Circular.
Biol. Surv. NAF -----	Biological Survey. North American Fauna.
BM Seed R. -----	Bureau of Markets. Seed Report.
Bot. B. -----	Botany Division. Bulletin.
Bot. C. -----	Botany Division. Circular.
Bot. CNH -----	Botany Division. Contribution from the National Herbarium.
BPI Bul. -----	Bureau of Plant Industry. Bulletin.
BPI Circ.-----	Bureau of Plant Industry. Circular.
BPI Dry Land Agr. C. -----	Bureau of Plant Industry. Dry Land Agriculture. Circular.
BPI Pub. -----	Bureau of Plant Industry. Publication.
BPI West. Irrig. Agr. C.-----	Bureau of Plant Industry. Western Irrigation Agriculture. Circular.
Chem. B. -----	Bureau of Chemistry. Bulletin.
Chem. Bib.-----	Bureau of Chemistry. Bibliography.
Chem. C. -----	Bureau of Chemistry. Circular.
Chem. R. -----	Bureau of Chemistry. Report.
Div. Pub. B. -----	Division of Publications. Bulletin.
Div. Pub. C. -----	Division of Publications. Circular.
Ent. B. -----	Bureau of Entomology. Bulletin new series 34-127.
Ent. B. (1)-----	Bureau of Entomology. Bulletin old series 1-33.
Ent. B. (2) -----	Bureau of Entomology. Bulletin new series 1-33.
Ent. C. -----	Bureau of Entomology. Circular series 2, 53-173.
Ent. C. (1) -----	Bureau of Entomology. Circular series 1.
Ent. C. (2) -----	Bureau of Entomology. Circular series 2. 1-52.
Ent. Com. B.-----	Entomological Commission. Bulletin.
Ent. Com. C.-----	Entomological Commission. Circular.
Ent. Com. R.-----	Entomological Commission. Report.
Ent. Map -----	Bureau of Entomology. Map.
Ent. T. -----	Bureau of Entomology. Technical series.

ABBREVIATIONS USED IN THE SUBJECT INDEX (Cont'd.)

Ent. Unnumb. Pub.	Bureau of Entomology. Unnumbered publications.
FB	Farmers' Bulletin.
FHB Map	Federal Horticultural Board. Map.
FHB News Let.	Federal Horticultural Board. News Letter.
FHB Not. Quar.	Federal Horticultural Board. Notice of Quarantine.
FHB SRA	Federal Horticultural Board. Service and Regulatory Announcements.
FHB Unnumb. Pub.	Federal Horticultural Board. Unnumbered publications.
For. Serv. B.	Forest Service. Bulletin.
For. Serv. C.	Forest Service. Circular.
For. Serv. FW	Forest Service. Forest Worker.
For. Serv. FB	Forest Service. Press bulletin.
For. Serv. RF	Forest Service. Report on forestry.
For. Serv. UB	Forest Service. Use Book.
Guam B.	Guam Agricultural Experiment Station. Bulletin.
Guam Ext. C.	Guam Agricultural Experiment Station. Extension circular.
Guam R.	Guam Agricultural Experiment Station. Report.
Hawaii B.	Hawaii Agricultural Experiment Station. Bulletin.
Hawaii FB	Hawaii Agricultural Experiment Station. Press bulletin.
Hawaii R.	Hawaii Agricultural Experiment Station. Report.
Inform. Radio Farm Sch.	Office of Information. Radio Farm School.
Inform. Unnumb. Pub.	Office of Information. Unnumbered publications.
JAR	Journal of Agricultural Research.
Lib. Bib. Cont.	Library. Bibliographical contributions.
Lib. Bul.	Library. Bulletin.
Mo. Crop. R.	Monthly Crop Reporter.
Mo. WR	Weather Bureau. Monthly Weather Review.
Mo. WR Sup.	Weather Bureau. Monthly Weather Review. Supplement.
OES Bul.	Office of Experiment Stations. Bulletin.
OES Circ.	Office of Experiment Stations. Circular.
OES Mis. B.	Office of Experiment Stations. Miscellaneous bulletin.
OES Rpt.	Office of Experiment Stations. Report.
OES Syllabus	Office of Experiment Stations. Syllabus.
OR	Official Record.
Porto Rico B.	Porto Rico Agricultural Experiment Station. Bulletin.

ABBREVIATIONS USED IN THE SUBJECT INDEX (Cont'd.)

Porto Rico C. -----	Porto Rico Agricultural Experiment Station. Circular.
Porto Rico R. -----	Porto Rico Agricultural Experiment Station. Report.
Pom. B. -----	Division of Pomology. Bulletin.
Pom. Unnumb. Pub. -----	Division of Pomology. Unnumbered publications.
Poster (Agr. Instruc.) -----	Poster. Agricultural Instruction Office.
Poster (BAE) -----	Poster. Bureau of Agricultural Economics.
Poster (BAI) -----	Poster. Bureau of Animal Industry.
Poster (Ent.) -----	Poster. Bureau of Entomology.
Press Serv. Unnumb. Pub. -----	Press Service. Unnumbered publications.
Sec. Back Yard Poultry Leaf. -----	Office of the Secretary. Back Yard Poultry. Leaflet.
Sec. C. -----	Office of the Secretary. Circular.
Sec. Unnumb. Pub. -----	Office of the Secretary. Unnumbered publications.
Solicitor C. -----	Office of the Solicitor. Circular.
SRS Doc. -----	States Relations Service. Document.
SRS Syllabus -----	States Relations Service. Syllabus.
USDA Agr. R. -----	U.S. Department of Agriculture. Annual Report.
USDA Bul. -----	U.S. Department of Agriculture. Bulletin.
USDA Circ. -----	U.S. Department of Agriculture. Circular.
USDA Dept. C. -----	U.S. Department of Agriculture. Department Circular.
USDA Dept. R. -----	U.S. Department of Agriculture. Department Report.
USDA Leaf. -----	U.S. Department of Agriculture. Leaflet.
USDA Misc. C. -----	U.S. Department of Agriculture. Miscellaneous Circular.
USDA Misc. Pub. -----	U.S. Department of Agriculture. Miscellaneous Publication.
USDA Misc. Sp. R. -----	U.S. Department of Agriculture. Miscellaneous special report.
USDA Mo. R. -----	U.S. Department of Agriculture. Monthly Report.
USDA Sp. R. -----	U.S. Department of Agriculture. Special Report.
USDA Tech. B. -----	U.S. Department of Agriculture. Technical Bulletin.
Veg. Path. B. -----	Division of Vegetable Physiology and Pathology. Bulletin.
VI Bul. -----	Virgin Islands Agricultural Experiment Station. Bulletin.
VI Rpt. -----	Virgin Islands Agricultural Experiment Station. Report.
WB Bul. -----	Weather Bureau. Bulletin.
WNL -----	Weekly News Letter.
YB -----	U.S. Department of Agriculture. Yearbook.

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BPI Pub. 619

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BPI Circ. 29

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